# The Builder.

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## *Designs for the National Albert Memorial.*

IT is unnecessary to remind our readers of the past proceedings in respect of the national monument to Albert the Good;—how that a committee was appointed by a public meeting at the Mansion House to obtain funds and erect a fitting evidence of the nation's regard; how that committee, having raised funds, instead of obtaining a design and forwarding it, as directed by the meeting, to the Queen for approval, unwisely, as we have always thought, threw upon her Majesty the provision of the design; from which day the character of the movement was to a certain extent changed; how that the committee named by the Queen called in a certain number of architects to advise, and ultimately arranged with seven of them to prepare designs for a memorial. All this, with certain intermediate endeavours in respect of a suggested obelisk, is known to all, as it is also that the designs so prepared have been inspected at Windsor, and are now in the Palace of Westminster. The proposition, we should say, was, as will be remembered, to erect on the north side of the Horticultural Gardens, and between those gardens and the Kensington-road, a splendid Hall, to be devoted to meetings intended to promote the interests of Art and Science. On the other side of the Kensington-road the Hall was to be confronted by the memorial proper, the ground around being laid out ornamentally in terraces. Last Saturday the *Times* announced that this plan was about to be abandoned. Our great contemporary said:—

"The architectural and artistic advisers of her Majesty have adopted another, and, as it seems to us, a far better idea. The old plan is abandoned as a whole, and in each of its parts. The scheme of a double monument, one half on the one side of the Kensington-road, and the other half on the other side, exists no longer. The group of statuary is abandoned without remorse; and, instead of the two, a single monument is to be erected. We know not whether it is to be placed on the northern or southern side of the Kensington-road; but we believe we can speak with some confidence as to the style and nature of the structure. It is to be what is called an Eleanor Cross, something similar to the Martyrs' Memorial at Oxford, or the monument erected to Sir Walter Scott, at Edinburgh. The effect of the latter monument is much injured by its unfortunate position, about to slip, as it should seem, down the side of a steep hill, and much out of keeping with the very striking and romantic scenery by which it is surrounded. Still, no one can deny to it elegance of design, and much architectural beauty. The Eleanor Cross which it is proposed to erect to the memory of Prince Albert is to be a building of much greater size and of imposing height. It is said that it is intended to give it an elevation of nearly 300 feet, so that it will be a very conspicuous feature in any distant view of the metropolis. In the lower part is to be placed, properly secured from the effects of our moist climate and smoky atmosphere, a statue of the Prince. The whole structure is to be intrusted to Mr. Gilbert Scott, so that we doubt not that full justice will be done to the utmost demands of Gothic architecture."

In making this announcement the *Times* was, at any rate, somewhat premature. It is more than probable that the arrangement will be as stated; but we have authority for saying that at that time the report of the committee had not been sent to the Queen; so that the matter certainly was not settled, even if it be quite so now.

The series of drawings submitted by Mr. Scott are magnificent in execution; and, as pictures, far surpass all the rest. They show, too, as a matter of course, great talent and taste. We are disposed to think the height must be overstated. We do not hear that any drawing showing the cross to have an elevation of 300 feet was sent in. At the angles of two terraces around the base of it, groups of sculpture are introduced. He has four or five designs for the Hall of Science and Art (only one for the memorial), very fanciful and in their style very beautiful.

We do not propose here to criticise the design recommended (we do not know enough of it to be able to do so), nor to comment at this moment on the propriety of adopting the style of the fourteenth century for the monument. We cannot, however, resist asking whether it is exactly what all wish who are striving for the honour of nineteenth century advance, that wanting an Albert Memorial we should be forced to take an "Eleanor Cross." There is surely something humiliating in the admission.

A few words as to some of the other designs, and without any intention of instituting comparisons.

When the intention to erect a memorial was first mooted, at the commencement of last year, we said,—"For our own part, we desiderate a grand union of the arts in honour of one who knew and loved them all. We see in the mind's eye a magnificent Temple enshrining a noble statue of the Honoured One. Upon and around the pedestal are groups and *relievi* illustrating his character; while other *relievi* and paintings, in the entablature and elsewhere, set forth the incidents of his life. The worker in metal, the glass painter, the mosaicist, have co-operated with the architect and sculptor: marbles of all sorts join with the richest materials of their several kinds and the cunningest art; and we have at once a fitting monument for the Hero of the family-life, and an evidence of the position to which the arts have attained amongst us."*

Most of the designers have followed out this idea.

Mr. Charles Barry submitted two designs; one of them for a highly-decorative building, to contain a sculptural group, in white marble, in which the statue of the Prince would, of course, be chiefly conspicuous; the other for an equestrian statue without a building. He advocates, however, the former kind of memorial, for many reasons; among the chief of which are these;—That the feeling with which the nation (no less than the Queen) regards the Prince we have lost is one of profound and affectionate regard, respect, and sorrow; and that therefore any memorial to be satisfactory to the national feelings in these respects should comprise a *portrait* statue, whereby his familiar presence shall be perpetuated to all the present generation of men, while the attributes with which that statue is surrounded shall evidence, not only to us, but to all future times, the many ways in which the Prince's daily efforts were directed to all those acts and processes whereby mankind were to be made socially and materially happy, self-reliant, peaceable, and Christian. That any such portrait statue cannot be had satisfactorily, in point of art, except in such a material as white marble, and would be unattainable in metal, whether dark as bronze or lustrous as gold. That consequently the *portrait* statue, with its attendant illustrative adjuncts, must in this country be *in a building*, and not be exposed wholly or partially (as, for instance, under a colonnade or loggia) to the influence of our climate, especially in London. Moreover, that quiet and instructive contemplation of any such statue and accessories can only be *in a building*, where the spectator is at ease and protected from disturbing influences. Lastly, that in a building there are numberless opportunities in the ceiling and wall spaces for additional illustrations of the Prince's life and labours, for the development of high art and decorative art, by means of paintings in oil and fresco, by bas-reliefs, mosaics, and otherwise.

The style and character of the building which he proposes is, externally, unique in this country; which he considers a point of great importance, in that it shall not be liable to be mistaken for, or confounded with, any building in common use. He has therefore chosen that period of North Italian Renaissance which is exemplified in the Certosa at Pavia and Giotto's architectural works in Florence. The building is in plan a Greek cross, with semicircular vaulted roofs, and with a cupola at the intersection of the arms of the cross. The material externally of stone and inlaid marble, with niches for marble statues, panels for marble or metal bas-reliefs, spaces for mosaics, in which last material the archivolts, friezes, and other like spaces have dedicatory inscriptions—the roofs of metal, gilt. This building occupies the centre of the site appropriated for the memorial by the Royal Commissioners, with the approval of Her Majesty. It is flanked by two imposing fountains, and the whole plateau is levelled and raised above the level of the high road some 10 feet, and is approached therefrom by broad simple flights of steps.

Internally, the walls and ceilings are occupied and decorated as above named; the prevailing effect being that of simple gold and full rich colouring, which is intended to give full effect to the memorial group, itself of pure white marble. This group is of very large size, from the number of figures it comprises. Immediately surrounding the statue of the Prince, but on a lower level, are emblematical figures of Religion, Truth, Purity, and Constancy; while on a still lower level are figures representing Architecture, Sculpture, Painting, Music, Manufactures, &c., expressive of the objects of usefulness which the Prince had so much at heart.

The alternative design is a figure of the Prince on horseback, on a pedestal of marble and stone, for the sake of variety in colour; the pedestal having niches and projections from it, to be occupied, as in the former design, by emblematical figures of the Christian virtues, and of the above different branches of art and science. The equestrian statue is proposed to be in different metals; the horse being in bronze, while the figure of the Prince himself is proposed of the new metal aluminium, for the reason that its light grey tint and dead unburnished surface would, Mr. Barry thinks, be more fitting and effective than either bronze or gold for a *portrait* and for the display of the highest sculptural art. The statue is necessarily colossal. The accessories as fountains, terraces, and steps, are the same in each design.

His design for the Hall seems founded on that of the Chapel at Versailles.

Mr. M. D. Wyatt sent in three designs for the memorial proper; an open four-porticoed Classic temple for the statue of the Prince, with other statues around under flat canopies, with steps, rich adornments, and water; a "cross," so to speak, Italian Gothic in style, highly decorated; and thirdly, a separate sculptural group, consisting of a figure of the Prince, seated, with a standing figure of Fame crowning him, on a richly carved pedestal of a sarcophagus outline. For the Hall, a large circular building, he also sends alternative designs, Italian and Gothic, the latter suggesting that he had Pisa in his recollection when he drew it. The drawings are effective and admirable.

Mr. Hardwick contents himself with a design for a group of sculpture and pedestal.

Professor Donaldson submitted a shrine with hemicycle for the statue. Statues and elegant arrangements prevail around. To the Hall, an apartment 150 feet by 80 feet, the Professor, true to his traditions, has an octastyle Corinthian portico, completed with sculpture. The interior of the Hall, very elaborately decorated, is set forth in a fine pencil drawing.

The matter will doubtless come more formally before us in a short time.

* Vol. XX., p. 75.

## KNIGHTHOOD.

THE celebration of the marriage of the heir to the throne with all the heraldic magnificence —with *fanfare* of silver clarions, with processions of yeomen of the guard in their scarlet doublets barred with gold, gentlemen-at-arms with their white plumes, state drummers and trumpeters in coats of cloth of gold, heralds in their tabards, and pursuivants, kings-at-arms, and garter king-at-arms with collar, badge, tabard, and scarlet satin mantle—has awakened a national interest in all the insignia of chivalry which has long reposed in the minds of a few antiquaries. All England has just seized heraldry as a voice with which to speak welcome to the beautiful daughter of sea-kings whom the Prince of Wales has chosen for his bride. Seldom have quarterings been so assiduously studied; never have the heraldic emblems of a foreign nation been so multitudinously displayed in our streets, as in the decorations of our houses, bridges, and public buildings, not only along the line of route through which the procession was expected to pass, but in every town in the United Kingdom—north, south, east, and west. Heraldic Latin and heraldic colouring have been diligently searched to find full and faultless expression of the public gratification. England has been one broad-spanned rainbow—one vast pageant. Much of the magnificence attained was due to the insignia of the different orders of knighthood, both in the civic decorations on the route of the entry of the Princess into London and in the ceremony of the marriage in St. George's Chapel, Windsor. We may follow up the interest thus awakened by an enumeration of the different orders of knighthood of European fame.

The word knight is derived from the Saxon *cnight*. It originally signified a soldier or horseman of war; but, in the Middle Ages, referred to a vassal that held his lands by serving his lord on horseback. In modern times it has become a title of distinction conferred upon persons whom the sovereign deems it fit to honour. There have been upwards of fifty orders of knighthood established in Europe. Of these the oldest in the world is that of the Round Table,—the almost mythical companions of which are best known as King Arthur's Knights.

It is scarcely needful to say that the order most in esteem is that of the Garter. The knights of this order, in their robes, collars, and stars, and blue garters decked with gold, pearls, and precious stones, formed the brilliant background of the marriage ceremonial in the Chapel at Windsor. They are personages of great rank, having for a sovereign guardian her Majesty the Queen. The Prince of Wales is a knight of this order. It will be remembered that over a general's uniform he wore the gorgeous robes of a knight of the garter at the celebration of his marriage. The husband of the Princess Royal and the brother of the late Prince Consort are both knights of this order. It is said to have been founded by Edward III., as every one has heard, after picking up the garter of the beautiful Countess of Salisbury, with whom he had been dancing; in confirmation of a remark he made to the smiling lords present, that he would make that garter of world-wide reputation. This most chivalrous society is a college or corporation, having a common seal belonging to it, and consisting of twenty-five companions, who are noblemen of the realm or princes of foreign countries, besides the sovereign. There are also attached to the order twenty-six poor knights, who are supposed to have no other means than an allowance given them. They are called the Poor Knights of Windsor, because the seat of this order is Windsor Castle, and the consistory of the order is St. George's Chapel. The officers belonging to the order are the prelate of the garter, the chancellor of the garter, the register (who is always Dean of Windsor), the principal king at arms, and the usher of the garter.

The order of the Knights of the Temple, though now extinct, was once too powerful to be placed lower in the list. It is uncertain whether this order was founded by Pope Gelatius or by Baldwin II., king of Jerusalem, circa A.D. 1117. These monkish knights at first dwelt in part of the building that belonged to the Temple of Jerusalem, not far from our Saviour's sepulchre, where they charitably entertained Christian strangers and pilgrims, and, clad in armour, led them through the Holy Land to view the different points of interest connected with the mission of the Messiah. Growing too rich, too powerful, and less religious in their lives, their order was abolished by Pope Clement V. in 1309; and their possessions divided among the knights of St. John of Jerusalem and other religious orders.

The order of St. John of Jerusalem had its first foundation and abode in the Holy City. Thence the knights removed their residence to the Isle of Rhodes; but, being dispossessed of this by the Turks in 1523, the Emperor Charles V. allowed them to make Malta their chief seat, on condition that they would send him a falcon every year as an acknowledgment. The property of this order was also very large; but it was not forfeited till the reign of Henry VIII. Up to this period the prior of the knights of this order in England and Scotland had a right to a seat in the House of Lords.

The Knights of the Holy Sepulchre were a very ancient body, instituted by Helena, the mother of Constantine the Great, who, at the age of eighty, journeyed to Palestine, and assisted in the finding of the holy cross.

Knights of the Bath were formerly a religious order. They were obliged to bathe themselves on the eve preceding their creation, and observe several other religious rites.

The order of the Rue, or of St. Andrew, is of well-known Scottish origin.

James I. instituted the order of Nova Scotia in the West Indies, the knights of which were to wear a ribbon of an orange-tawny colour. And the same monarch divided the hitherto combination of title, knight-baronet. A "plantation" was in formation at Ulster, and the persons making disbursements in furtherance of this object were advanced to the distinct dignity of baronet,—a rank that was henceforward to take precedence in all writings, sessions, and salutations of ordinary knights, knights bannerets, and knights bachelors.

A knight-banneret (from the Dutch *bannether*) is a knight made on the battle-field, under the standard. In several centuries successive sovereigns marked their approbation of individual valour on the field of battle by the ceremony of cutting off the point of the standard of the person they wished to honour, thus making it a banner, and the person so distinguished a knight-banneret.

Knights bachelors are of the lowest order of knighthood, yet of very ancient origin. The foundation of the order is traced back to a custom of the Germans, who, as soon as the State considered a young man fit to manage arms, furnished him with a shield and javelin before a large assembly or full council. In less remote ages part of the ceremony of investing a young man with the girdle of knighthood consisted in his solemnly entering a church, and placing the sword, which had been presented to him with the girdle, on the altar, and vowing his services to the glory of God. Eventually it became customary to receive the honour of knighthood, not in public assembly, but at the hands of a prince; kings sending their sons to neighbouring princes to be thus distinguished. To the sword and girdle of this period the development of chivalry added gilt spurs. Henry III. made an order called the Knights of Christian Charity, for the benefit of poor captains and maimed soldiers.

The terms carpet-knight, and knight of the chamber, used sometimes in a depreciatory sense, signify a knight created in times of peace by the sovereign in a carpeted palace, in distinction from a knight who has won his spurs upon the blood-stained battle-field.

Of foreign orders we must make first mention of the Danish knights of the Elephant, reminding our readers that the Danish castellated elephants and ravens, surmounting the Venetian masts on London Bridge, formed an especial decoration of significance on the route of the Royal procession.

The French have numerous orders of knighthood:—

The knights of Saint-Esprit, or Holy Ghost, created by the French king Henry III., at his return from Poland, who was born and crowned king on Whit Sunday.

The knights of the order of the Virgin Mary in Mount Carmel were appointed by Henry IV., in 1607, consisting of 100 French gentlemen.

The Knights of St. Michael the Archangel, whose order was established by Louis XI. in 1469, to consist of thirty-six knights, of whom the sovereign was to be chief.

The Knights of St. Magdalen appointed by St. Louis to prevent duels.

The Order of the Thistle, a Bourbon order of knighthood. Motto: *Nemo me impune lacessit, i.e.*, None that provokes me goes away unpunished.

The Order of the Porcupine, whose motto was *Cominus* and *Eminus*, till Louis XII. crowned the Porcupine with another, *Ultus avos Trojæ*.

The Order of the Lily in Navarre.

The Order of the Crescent, created by René, Duke of Anjou, A.D. 1462, when he conquered Sicily. Motto: *Los.*

The Order of the Jar, made by Don Garcia, king of Navarre, in remembrance of a vision he saw in a cave, when out hunting, of a pitcher of lilies on an altar before an image of the Virgin.

The Order of the Golden Shield, founded by Louis II. Motto: *Allons.*

The most ancient Order of the Genette, or Horse-bit, founded by Charles Martel after the defeat of the Saracens in the great battle of Tours, A.D. 783.

The Knights de l'Epi, or ear of corn, or of the Ermine, established by Francis I.

The Knights de l'Etoile, or of the Star. Motto: *Monstrant Regibus astra viam*, The stars show a way to kings.

Spain has instituted several orders of knighthood:—

The sovereign of Spain is chief of the Order of the Golden Fleece appointed by Philip, Duke of Burgundy, upon his marriage with Isabel of Portugal. Motto: *Ante ferit quam flamma micet.*

Alonzo VIII., A.D. 1118, founded the Order of San Salvador in Arragon.

The Knights of St. Maria de Mercede are a Spanish order, as are those of Montesia.

The Knights of the Pear-tree, created A.D. 1179, were subsequently known as Knights of Alcantra in Leon.

The Portuguese own the startling Order of the Knights of Jesus Christ.

Poland can boast two orders,—that of the White Eagle, founded by Ladislaus V., A.D. 1325; and that of the Militia Christiana.

Venice owns two orders,—that of St. Mark and that of La Calza, or the Stocking.

Sweden possesses an order entitled the Knights of the Sword and Baudrick.

The Duke of Savoy was confirmed Grand Master of the Order of St. Maurice and Lazaro by the Pope, A.D. 1119.

Cosmo, Duke of Florence, instituted the Order of St. Stephen, A.D. 1591.

It is an instance of the Mediæval alliance between priesthood and knighthood to find Pope Alexander III. instituting an order of knighthood in which the Rule of St. Augustine was to be observed. It was called the Order of St. Jago or St. James.

As an instance of the services rendered by knights, we would point to the Teutonic Knights, upon whom the Emperor Ferdinand II. bestowed Prussia, A.D. 1226, on condition that they would subdue the infidels, which they succeeded in doing; and although this bravery may seem a species of knight-errantry when associated with times so remote, we have an order instituted in our own day, by our most Gracious Queen, as a recognition of scarcely less chivalrous service—the Order of the Star of India. This is a curious chapter in the history of this age of commerce, iron and steam power, akin to the largesse so bountifully bestowed upon Lancashire at need. St. George may be proud of England still.

## CONSTRUCTIONS IN WOOD IN FOREIGN COUNTRIES.

IN *Norway* we still find traces of some good ancient wood architecture, for which I refer you to the illustrations by Mr. Dahl. There are six alluding to the church at Borgund, near Bergen: six refer to the church at Urnes; and nine illustrate the church at Hittendal. When we carefully examine the style which these structures bear, we notice various elements. Above all we have Christian motives in the ornamented capitals. These are accompanied with motives from the old Norsk mythology; and we have, further, some signs of Byzantine art. The latter was introduced into Norway after the Waring expedition to Constantinople, in the year 1078; and it is chiefly displayed in the mouldings round the doors. The church at Urnes is not so remarkable as the other two, because it has lost many of its original features by subsequent alterations. From the pillars in the interior it is seen that, originally, the whole church was carved in relief, and it bears a strong Byzantine character.

It was customary, at the beginning of the Middle Ages, to vary the ornamentation as much as possible, such as the door mouldings, cornices, &c.; and we have instances where hardly two are alike in length and breadth. The light enters into these churches through small bow-windows; hence they are dark; which is further caused by smaller interior constructions, such as prayer-rooms, infringing to some extent upon the whole

design. The church at Borgund was erected in 1073: the bell in the belfry bears the inscription, "St. Laurentius, 1663," which leads us to suppose that, at the beginning of the seventeenth century, some alterations were made, which is further proved by the remaining fragments of painted glass, grey in grey, as executed in the sixteenth century.

In consequence of a church conflagration the Norwegian Government issued an order that all church doors should be altered to open towards the outside. This destroyed in most cases the original character in the design of the portals. An original side-entrance may still be seen at the Hittendale Church, from which we may infer the skill of the northern forefathers. The columns in Hittendal Church and the ceiling of the choir were originally painted in water-colours: at present they have a coat of plain oil-paint.

On the left door-post of the church in Find is a Runic inscription, in two lines, of which the following is a version:—"Bishop Rainar consecrated this church. He was followed by the following gentlemen:—Chaplain Thord, and Einar Naf, and Throud Mok, and Thorstein Rand, and Throud Kin, and it was he who carved these runes." Now Bishop Rainar occupied the see from 1180 to 1190, consequently this church is about 670 years old.

Besides the foregoing we find a few very early pedestals of baptismal fonts in the churches at Find, at Bö, and at Gaara. These were originally painted, as may be seen from the one at Bö. In the church at Bö remains also an interesting old pew.

Passing south from Norway into *Denmark* we meet with a very important altar in the cathedral at Schleswig. It was carved in oak by Hans Brüggemann in the year 1521. The numerous representations chiefly illustrate the life and death of Christ. The conception is true to nature and full of life.

From Schleswig we come to *Germany*. In the north of this country we have an interesting church at Smorgraw, in Silesia. It dates from the year 980: the tower is of a more modern reconstruction. The church is built of larch, and only trimmed with the axe and saw. It is 25 feet long, 23 feet wide, and 13 feet high. Adjoining is the altar recess, 20 feet long, 17 feet wide, and 11 feet high. This structure has lost much of its novelty by numerous coatings of whitening.

Next are the churches at Syrin, 1204, and at Lubom, 1205, which are constructed of oak in blockbond. The roofs of most are made to project, by which a hall or arcade is formed round the enclosed room, and this may be the cause of the wood being so well preserved. Similar structures are found at Jedlownik, Muschana, Rupten, Ragan, and at Bauerwitz. The latter is decorated with colours. Of great interest are a few wooden seats in the church at Ratzeburg, which are presumed to date from the twelfth century.

A house at Hildesheim has important details, and of similar character examples exist in Halle, Paderborn, and in the Alt-Mark.

The door of St. Mary, in the capitol, Cologne, has carved wooden nails which project. In the town of Geseke can be seen interesting details amongst various timber structures. There is at Druna a beautiful timbered gable, and of plainer character is a house in Thüringen.

An interesting early building from the thirteenth century was a chapel, dedicated to St. Jodocus, the son of Juthalus, King of Brittany (France), and the remains were still to be seen in 1846, near Mülhausen, in Thuringia. It had a pointed roof, and the vaulted ceiling was painted illustrating the life of St. Jodocus and other Biblical subjects. A good and full account of this example may be read in Mr. Silesius von Tilenau's work upon this chapel.

A curious article from the thirteenth century is the state chair of Count William of Holland, whose coat of arms is carved on the same. It is at present in the possession of the King of Bavaria.

In the Church of the Cross at Coburg are the remains of an altar-screen dating from 1401. Coburg Castle has several interesting specimens of woodwork, amongst which is most prominent the Prince's Chamber. It was built in 1425. From the same period dates a richly-carved table in this building, and of further value are the wooden doors.

Here I must mention that St. Sebald's monument in that church at Nürnberg, must have existed in wood previous to its being cast, and in that material it formed a masterpiece of conception and execution.

The splendid pews in the Minster at Ulm date from 1468. The most perfect masterpiece in Germany is undoubtedly the prayer pew, made in 1472, for Count Eberhard, of Würtemberg. It has been illustrated in seven plates by Heideloff. The abbey Church at Laach, on the Rhine, retains fragments of an altar-screen carved in 1480, which bear traces of colouring.

A most beautiful altar-piece from the end of the fifteenth century is in the church of St. Wolfgang, in *Upper Austria*. It rises from a pedestal 2 feet 9 inches high, and 4 feet 8 inches wide, decorated with carvings and painted wings, by which it may be locked. Above this is the headpiece, 15 feet high. The carved figures are a little more than natural size. The scene in the centre, representing the consecration of the Virgin by God, is wonderfully executed. On the right is St. Wolfgang, and St. Benedict is on the left. The paintings relate to the life and death of Christ and the Virgin. The figures in the upper portion are Christ, Maria, St. John, St. John the Baptist, St. Michael, St. Ottilie, &c. Upon one doorway the following inscription is carved:—"*Benedictus abbas in manse hoc opus fieri fecit ac complevit per magistrum Michaelem Pacher de Prawneyk, A.D.* 1481." (Benedict the Abbot had this work made and completed by Master Michael Pacher, of Brunecken (Tyrol), in the year 1481.) In the Hospitallers' Church at Salzburg is a highly-elaborate shrine in the shape of an oblong square, carved in wood, gilt and painted. It dates from the second half of the fifteenth century, and the conception and execution are very artistical. It serves to keep the relics of saints. Of high merit are also the twelve pews in St. Barbara's Church at Kuttenberg, in Bohemia. The seats are partitioned, and have a canopy at the back. These were worked by Meister Jakob, and are certainly one of the finest specimens of Gothic art from the fifteenth century.

Near Ishel, in *Austria*, lies in a picturesque situation, the small market-place, Hallstadt. In the parish church of the same is an elaborate altar-piece, of high artistic conception, executed in limewood. It is decorated with gold and colours, and dates from the end of the fifteenth century. The carved groups and the paintings refer to the life of the Virgin Mary. The height of this altar from the stone pedestal is about 26 feet. In the course of time it has suffered much; but its original form and details have been gathered and published by Jobst and Leimer in their work, "Mittelalterliche Kunstwerke aus Oesterich, 1862."

The same artists furnish also a view of an altar-screen in the church at Waldburg, Upper Austria. This bears the date of 1521, and has many beautiful features.

From the fifteenth century are the wooden doors in St. Gereon's, at Cologne, very striking by their peculiar carvings. The figures project very little, which the artist, no doubt, purposely determined in order to avoid the heavy weight of the wings. They were originally painted in harmony with the character of the whole building. In this same church are also some old pews of romanesque character, worthy of notice.

Of the same period exists, at Nürnberg, a piece of furniture serving as a cupboard, with stand. It was entirely covered with colours. In the same town is a coat of arms, carved in 1481, illustrating the union of two families. In Kidrich is a fine prayer-stool; and a reading-desk frame, 1496, is in the church at Pappenheim, where also portions of old pews are remaining.

The abbey church at Blaubeuren retains some good woodwork, more especially the magnificent altar-piece, richly carved, and noble in appearance. Of good character are also the pews in St. George's Church, at Altenburg.

The doors at St. Laurentius's and at St. Sebald's, Nürnberg, are both examples from the end of the fifteenth century.

Some excellent pews are preserved in Seidelfingen, in Würtemberg; and a number of doors appear in Nürnberg, Ober Kranichfeld, and Denkendorf.

In the cathedral at Halberstadt is a splendid example of carving over a tabernacle, and some curious poppy-heads from the time of Bishop Ernest of Saxony.

The Townhall of Nürnberg occupies the attention of every visitor by its ancient woodwork, from the fourteenth and fifteenth centuries. Amongst the most important is the large ceiling over a room 80 feet by 60 feet, which was, however, not finished until 1613, by Mr. Behain.

Prettily carved flowers are seen in the pews in St. Laurentius's Church, Nürnberg. In the domestic buildings attached to this church are wooden ceiling and doors, with interesting details. In the former nunnery church at Löwenthal, on the lake of Constance, we find fragments of an altar-screen and pews which are neat and manifold in their design.

The pews in St. Clara's Church, at Nürnberg, are very good, and were made in 1515. Similarities are found in Tübingen, in Stuttgard, and in Bebenhausen.

In a private house at Nürnberg are two columns, supporting galleries, with carved railings. A house in the Burgstrasse, in the same town, retains a very interesting door; and one similar to it is at Castle Salzburg. In the armoury at Nürnberg is an old chair from the time of the Emperor Maxmillian I.

The woodwork in Castle Hohenstein, Würtemberg, is also worthy of attention. Plate 6 represents a magnificent door, made between 1535 to 1540, and a richly-carved table from the beginning of the fifteenth century is on plate 67.

In the church at Herrieden is a reading-desk from the end of the fifteenth century, and a very rich table with carved and inlaid decorations is in the Abbey Kaisersheim, in Swabia.

In domestic architecture we find interesting features in Salzwedel, Brunswick, and Halberstadt. In Hildesheim are very good carved transoms. A door in Salzwedel deserves more special attention. In Gosslar is a fine door, with richly carved frame: the wings seem to be of later origin. Wardrobes of this time are met with in Salzwedel, Nordhausen, and Calcar, on the Rhine.

From the middle of the sixteenth century are the ceiling and wainscoting in Castle Füssen. The former is a most remarkable production of the period, and partly decorated with colours. In Stendal is a bay window, supported by a column, bearing the date 1650. Similar details are found in Gosslar, Brandenburg, and Magdeburg.

Doorways of this period are seen in Salzwedel, Taugermünde, and on St. Martin's Hospital, Nordhausen. Some of these bear the date 1530.

In St. Catherine's Church, at Brandenburg, is a wooden floor under the organ, which is painted in the character of the seventeenth century. Ceilings in the same style are those in St. Anne's, at Stendal; in the cathedral at Brandenburg; and in the town-hall at Nordhausen.

Open timber roofs, such as we have in England, are scarce in Germany. One reason for this may be that, in the latter country, they adhered more to the stone vault.

Before I conclude my remarks upon the wooden structures in Germany, I refer to the rustic habitations which are scattered through the Black Forest and through Switzerland. They are the result of study and of experience, from the fifteenth, sixteenth, and seventeenth centuries. Many of them are really charming, and display happy motives. It will be seen that a great similarity exists in these structures; but each canton (or county) bears a character of its own. All those who wish to get information about this style of architecture will find it in Eisenlohr, "Holzbauten des Schwarzwaldes;" Hochstetter, "Schweizerische Architectur;" Varin, "L'Architecture Pittoresque en Suisse."

In Spalatro, in the kingdom of Dalmatia (Austria), the visitor's eye is attracted by a fine wooden door at the cathedral. It was made by A. Guvina, a native of that town, in 1214. This door has two wings, each divided into fourteen panels, in ornamented frames. In the centre of the panels is the relief, 1½ inch deep, 13 inches high, 16 inches wide. The ornaments are fastened with wooden pegs. The total height of the doors is 16 feet 3 inches by 10 feet 6 inches, and 2½ inches thick. The twenty-eight carved reliefs refer to the birth, the life, and the death of Christ. The technic is very remarkable, and it is one of the most ancient that we know of.

In the parish church at Arbe, in the same kingdom, are seen some fine pews, bearing the date 1445. The style in which they are executed denotes them to be Venetian workmanship. They are bold and energetic in design, and create a good effect. (*Jahrbuch yur Erhaltung der Baudenkmale im Oesterreischischen Kaiserstaate. Band* 5.)

*Italy.*—A beautiful construction in wood was seen in former years in the cathedral at Messina, in Sicily. It is much to be regretted that this fine work was destroyed during the late revolution, 1859, and we have in future only to look for it in the illustrations by Messrs. Morey & Rous, "Charpente de la Cathédral de Messine."

In order to understand the various features displayed in this edifice, it is necessary to call to our memory a few historical facts. The original inhabitants of Sicily were Pelasgians. It became

a colony of the Phœnicians and of the Greeks. The latter founded Messina, and the traces of Hellenic art are to be found in all the remains of the old monuments throughout the isle. In the third century before Christ, Sicily became the battlefield where the Carthagenians disputed to the Romans the supremacy of the world. Since then it belonged to the Romans, who were conquered by the Goths under Theodoric. In 827, after Christ, the Saracens invaded Sicily; and towards the end of the eleventh century it was conquered by the Normans. The character of these various tribes is traceable in the Cathedral at Messina, but the Grecian style is predominant. The carpentry itself is of plain construction, and it is the decoration which occupies our attention most. The paintings must have been made after earlier examples, introduced by the Greeks. The cathedral itself was erected under the Norman King Roger II., in 1130, at the time when the country was in full prosperity. It shows the form of a Christian basilica, combined with the richness of Grecian decoration, and some limited features of Saracen architecture. The Roman basilica is displayed in the shape of the edifice. The Pointed arch refers us to the Pelasgians, and the Byzantine style we see in the painted figures. Besides these, we notice the Mauresque in the Arabesque ornaments. The domineering Grecian character is displayed in the correction and in the arrangement of the ornamentation of the carpentry. Although this monument was erected during the Middle Ages, it must be looked upon as a copy of antique art.

From the sixteenth century dates the fine and most elaborate wainscot in the vestry-room in St. Maria's in Organo, at Verona. The author of this beautiful piece of workmanship was Fra Giovanni. It is certainly the finest in Italy, and its effect is more heightened by the paintings above on the vaults which were made by Moroni. In this same church is also preserved a reading-desk by Fra Giovanni. In its general appearance it looks a little heavy; but it has one peculiarity: the carver has represented through inlaid work an antiphonary, which I have not met with elsewhere.

The seats in Santa Maria Gloriosa de Frari, at Venice, are from the fifteenth century, and are a mixture of German and Italian art.

From the sixteenth century remain pews in St. Peter's Church, at Perugia. The artist who produced these had, no doubt, made his studies in Rome, as the example displays much of ancient Roman art, and as such is very fine.

From the end of the fifteenth and from the beginning of the sixteenth century are the pews, decorated with marquetery work, at Sienna and at St. Assise, near Florence.

A fine specimen of Italian Gothic is the wooden reading-desk which stands in the apsis in St. Ambrose's, at Milan. Jos. Justen.

## THE ARCHITECTURAL EXHIBITION.

Our notice, last week, of the Exhibition now open in Conduit-street, referred exclusively to ecclesiastical architecture; but many of the drawings of recently executed or designed works in the branch of our art, were left unmentioned. It has been remarked to us, that writers who make question of the appropriateness of the Mediæval plan with broad aisles and long transepts, for the Protestant form of worship, do not recollect how many churches have been built of late years, quite without aisles; and that the old examples, indeed, are numerous. Instances of the latter arrangement, however, are almost exclusively those of small churches; and efforts to do away with the obstructions to the view of that portion of the interior where the service is conducted, and to hearing, may really be considered as limited to the case of the designs that we described, where the aisles are intended to serve merely as passages, or to the Dissenters' chapels that we noticed, where iron columns are substituted for massive piers. The growth of the latter class of structures,—nourished, perhaps, by the decided course taken on the occasion of the competition for Mr. Spurgeon's chapel,—shows that the importance attached to preaching is not lessened since the eighteenth century, the latter half of the seventeenth century, the period especially comprising, with that of the construction of galleries in churches. Meanwhile there are many who, considering that the importance of preaching should be recognized in the plan of the structure for the Reformed Church, whilst that galleries, or any arrangements of seats not facing in one direction, are unsuited to a house of prayer, point to the existence of models in some of the churches of the preaching friars, which would be more in harmony with the Protestant form of worship, than the arrangement usually adopted. To the subject of these models, possibly we may advert at some future time.

To see what has been the usual arrangement of plan, we may not unfairly take the evidence as we find it in the works that are shown in one drawing (No. 188) by Mr. John Norton. These include many of domestic architecture, and amount to seventy or eighty in number; whilst in the frame, we find clearly shown the plans of ten churches. The smaller buildings, four in number, have no aisles: the six others are designed with those features of plan; and have them of width sufficient for the reception of seats. All the plans have long chancels, unless with one exception; whilst two of the designs have also transepts in the rear of the position of the reading-desk and pulpit. The erroneous course that some architects are following as to uses of a class of buildings, leads them to a similar course in the decorative part of their architecture. This part, as in the case of the works just now noticed, has every good quality but that which memory alone does not supply. Of that, novelty, we demand very little, and we even dread its dominance; but that it is an essential in art nevertheless, we have often shown. But, can any architect under the prevalent fears of employers about deviating from thirteenth and fourteenth century precedents, produce a multitude of works in ten years, without danger of getting worse at every fresh case? Two designs (280, 290) for the new church at Hertford, by Messrs. Thos. Smith & Son, Geometric Decorated in style, and one of them certainly not a bad production, are yet behind the requirements, if we are right that something is required in art-architectural beyond details that are those of the "Decorated" period, and something in plan distinct from the arrangements of the Roman Catholic church in the Middle Ages.

In certain architects' works, indeed, we excuse what is left of Mediævalism, for the sake of an unusual amount of freshly-designed detail. Amongst such works are those of Mr. Street, which are represented in Conduit-street, though rather less forcibly than heretofore. His principal drawing (152), "Interior of St. Peter's, Bournemouth, now in course of erection," is more remarkable for its workmanship than for those piquant bits in which the architect usually indulges; whilst in the "Elevation of the Font, Font-cover, and Metal Baptistery, about to be erected in the church of St. James the Less, Garden-street, Westminster" (216), there are details which along with the general form, are very questionable. Such are those of the shafts. When decoration is added to members of the sort in question,—unless it be ornamentation of a mere necking, or of the whole shaft,—it is usually applied to the lower portion of the shaft. There should be argument other than that of novelty, for deviating from an arrangement which is so general; and we do not discover it from the design before us. The design for the proposed church of St. John, Torquay (233), where the tower has a lantern-terminated capping, and four corner pinnacles, each lead-covered and square on the plan, is the best of the works that Mr. Street exhibits. His "Chapel of School-room, &c., now in course of erection at Uppingham, Rutland" (287), is rather tame, from his hand. His "Prospect of the Church of St. Michael, Penkivel" (235),—like the last, a coloured drawing,—shows a building "now being restored" under his care. Beneath a lich-gate, in the centre of the way, appears a block of masonry, slightly decorated at the sides, the use of it being to rest the coffin upon. But we can recognize little effort in this architect's works to solve the problem we have adverted to; indeed, some of his interiors are remarkable for massiveness of their piers. Similar remark might be made of Mr. Slater's works; though there is always something noteworthy in them. His "Burntisland Church," of which an exterior and an interior view (204, 205), are exhibited, is built on sloping ground, which gives the chancel considerable height on one side; and it has a lofty straight-sided, and very blank-looking tower, surmounted by a short spire. Internally, the church is remarkable for the arrangement of the chancel. A flight of steps, broken only by a landing, occupies the middle of the chancel, starting from the usual position of the screen and terminating at the commencement of the polygonal apse. Within the apse, stands the altar, a *baldacchino* or canopy on four shafts, quite detached from the wall at the back. A low screen-wall, similar to that now generally substituted for a roodscreen, is returned as parapet to the steps, and appears also to serve as the front and desk to the stalls. We cannot discover whether the structure is for the Protestant or the Roman Catholic ritual; but if the arrangement of stalls in a choir or chancel, and the custom of conducting part of the service at a distant table or altar, are to be maintained, this disposition of the eastern portion of a church may have some advantages. The cubical form which Mr. Slater has adopted for the upper part of his pulpit, appears, as he has it, very inferior to forms which are of the circle or octagon on plan. In the same architect's Honolulu Cathedral (213, an interior view), he has relied almost entirely on painted decoration. The piers are simple parallelograms on plan, and carry pointed arches, which are without chamfers or mouldings. The colour consists of occasional bands and rosettes, very plain in treatment, with more elaborate ornamentation in the place of imposts. This latter forms the termination to a subject, on each pier, presenting figures of the saints. Spandril-trusses, boarded over and perforated, are placed beneath the tie-beams, dividing the length of the nave into the bays, by a succession of pointed arches; whilst the timbers above the tie-beam appear to be plastered over on the upright face,—the triangular compartment thus formed, being treated as a space for painting. The figures represented have an archaic, not to say deformed, manner; but, in several respects, the architect's work has merit. Form, at least, is not thrown away for the sake of colour. The whole design should be judged whilst recollecting the class of mind to which, in this particular cathedral, decoration will be addressed. The same architect exhibits a view (265) of Mr. Beresford Hope's house, Bedgebury Park, as altered by the late Mr. Carpenter. It is a building of Italian character, with two stories of dormers in the roof. To the church adjoining, Mr. Slater has added a spire. Had he looked no further than some of the Italian churches of Wren, he might have found out how to produce a spire more worthy of himself as a Gothic architect, than this one is, at Bedgebury. Amongst the numerous works that are exhibited by Mr. E. B. Lamb, is (in No. 159) a sketch design for a church, "proposed to be erected near New York, America, a plain building, to accommodate 5,000 persons;" but there is no plan; otherwise it might have been interesting to see how the architect proposed to deal with so large a number. We observe, however, that the main portion of the building is a square on the ground, terminated by a pyramidal roof-covering and a square lantern; whilst that projecting east and west, are narrow portions of the plan, one of which is flanked by two towers in the re-entering angles. Mr. C. H. M. Mileham exhibits sketches (242) of a design for a church to hold 2,000 people. It has no piers or galleries; and the plan is a square, with side recesses, and a shallow recess as chancel, from the middle of which projects an apse. The central area is domed over on pendentives; whilst the sides are vaulted. Externally the design is plain, showing only the angle portions and centre surmounted by pyramidal roof-coverings, and the doorways and other apertures arch-headed; whilst a band of sculpture encircles the lower portion of the building.

Several works in ecclesiastical architecture, by Mr. Goldie, are in the Exhibition; but one of them, the Conventual Church of St. John of Jerusalem, Great Ormond-street, erecting for Sir George Bowyer (72), is, so far as we are able to judge from the elevation that is shown, the least satisfactory of the works by the architect that we have seen. A very plausible argument might be put forward to the effect that those who are known as Gothic architects,—who are not ignorant of the principles of design in general, or of history of architecture in its varied examples,—would be those to whom, if the Gothic were forbidden, we should look for the regeneration of architecture. For, not having power or temptation then to adopt the features of the Gothic which are not those of our civilization and time,—and which by their own account, they are striving to eliminate from the Gothic,—these architects would supply to the other style which they would have to take up, both the originality in features, and the full measure of correction, which are within the scope of the Gothic, and are all that the Italian style has wanted,—substituting spirit for tameness, and imparting that propriety and truth of structure which have been too often subordinated to supposed effect. In this way, it might reasonably be argued, that the last selection of the architect for the Government Offices, with the stipulation imposed upon him,—far from being, as has been said on both

sides, an unwise measure,—was the most judicious step that could have been taken with the aim at a future grand era in our art. Surely this ought to be the result, if the present men are artists, and not merely clever compilers. Unfortunately, here in the Exhibition is a case where such reasoning is pulled up short: and, referring to Reynolds, where we find that *invention* is nothing more than a series of images previously gathered and deposited in the memory, we are brought to a conclusion that the modern Gothic art must ere long be worn out, if its professors are able to devise no greater amount of new material than they here give. Mr. Goldie in this conventual church, has produced so spiritless a design, that his presentation of Italian architecture must be repudiated by all who are aware of the capabilities of that particular style, as by many others who regard taste as favoured by neither style exclusive of the other, or especially. An arrangement of four Ionic pilasters below, and four Corinthian with a pediment above; an ordinary doorway, and a window with broken pediment; certain emblems which have little of ornamental character; and a dome appearing in the distance, are the features. Mr. Goldie must have tried to make the Italian repulsive. His other works in the Exhibition include a view (187) of the "Interior of St. Peter's Church, Phibsborough, near Dublin,"—an excellent drawing, showing the chancel and transepts, with many altars,—a "Prospect of the Priory of Our Lady, Richmond, Yorkshire" (310), one "of the Convent of Mercy, Ballina, county Mayo, Ireland" (311), and "St. Wifred's Church, York" (364). He also exhibits an "Elevation of Principal Front for Hôtel de Ville, Brussels" (318), and "Sketches for Portions" of the same building (348), which were submitted in competition in 1861.

Amongst the drawings of works in ecclesiastical architecture, are certain "Studies" (374, 377, and 378), by Mr. Henry Clutton, referring to buildings designed and executed during the last three years; and Messrs. Willson & Nicholl, besides a drawing of "St. Charles Borromeo's Church" (162), and one of metal-work (241), display in one frame (266) designs for schools, cottages, chapels, altars, and other works, which have considerable merit. With these is a drawing of the Chesapeake Memorial, Southsea, Hants, a monument of the columnar form, and which is neither a large-scale copy of Doric or Corinthian, nor a bad thing in the main. However, the pedestal is sadly deficient in base-moulding. Mediæval structures, with which the architects are familiar, invariably have the base spreading and boldly marked, as requisite for the idea of support. Could we generalize from such instances of inaptitude to grasp principles that may be learned in any good style,—principles which are those of universal architecture,—and to apply them universally, we should be in danger of arriving at a low opinion of the merits of some of our architects as artists. The study of models, even those of a single style, should teach something more and better than the imitation of them, or of their style restrictedly and alone. Amongst the designs for churches, in the Exhibition, should be named the design by Mr. Ashpitel for the "New Church for Oamaru, New Zealand, to be built of wood, plastered between the timbers, and covered with shingles," of which "the idea is taken from an old chapel near Pershore, Worcestershire." The design here is very simple, though ecclesiastical; but it is suggestive of works that might receive a considerable amount of decoration from native hands, and preserve records of ornamentation that may shortly become extinct. The wooden sill should have been placed on stone, both for durability and effect.

Without attempting a classification of the structures represented in the Exhibition, and the designs, comprised in the secular division of buildings and architecture, we will now mention some of the principal works of that division. Amongst them are two designs for completing the International Exhibition building decoratively. One, by Mr. J. Giles (234), would make very great alterations in the course of "improving" the building, the most important being the removal of the domes, and the reconstruction of one of them in the centre of the plan. Besides this central feature, there would be three domical roof-coverings to each angle-block, and many additions in details, the general result being a somewhat better effect than that of the existing structure. The other design (256), "A Suggestion," by Mr. H. B. Garling, certainly does not seem to us as it is described, in the same *motif* as "the arcades of the Horticultural Gardens." Its regular bands of colour, and its domes, as well as certain features like minarets, make the whole design Mediæval-Egyptian or Saracenic; and because the design is markedly of that character, it is not as the author considers it, "in an appropriate style." Mr. Giles also shows a photograph (34) of his accepted design for the Langham Hotel. The details of the windows too closely resemble those of the Grosvenor Hotel. A tower with domical roof-covering is added. Two of the competition designs for Malvern College, are shown. One of them (121 to 123) has some good details of Early English character, modified by the introduction of sculpture in *tympana* of arches; but certain window-mullions would be weak, of the length they are shown.

Some good drawings for the decorations of the Bath theatre, by Messrs. Green & King, as proposed in the second premiated design by Messrs. Green & De Ville (116, 117), are hung side by side with others for the decorations of the Hartley Institution, Southampton (93, 96, 100, and 105), bearing the same names of architects and decorators. These drawings deserved to be better placed, not only on account of their merits, but because every opportunity should be taken to demonstrate the importance of interior decoration as a subject for the attention of architects themselves. All decoration is part of architecture; coloured decoration is predominantly concerned in the effect of most interiors; and architects should never have allowed the study and control of it to escape them. Photographs from plans of the Bath Theatre, the building by Mr. Phipps, lately completed and opened, are shown (177), but at too great a distance for examination.

One of the most important drawings in the collection, from the subject, and the drawing itself, is the View of London from the Victoria Tower, Westminster (179), which helps to show Mr. H. R. Newton's proposition for the embankment of the Thames, and the general character of buildings that might line the new roadways. Without a plan, and elevations of the two lines of quay, it is impossible to understand all that the project included. It is only plain that the author was in favour of a high-level line, with descents from it, to pass under the bridges, in addition to the junctions with the bridges at their level; but we are left in doubt as to the mode of passing the Houses of Parliament, as well as Somerset House, and whether there would be sufficient headway under the Charing-cross Railway-bridge; what would be done with the barges, and floating timber, and as to the goods at present craned into warehouses; how the arches designed to carry the roadway would be kept free of filth and silt, and how they could be properly watched by the police, as well as how the sewer would be provided for. But there is reason, beyond what is shown by Mr. Newton, for apprehension that the design carried into effect will be far from that which the public convenience demands. Mr. C. Henman also exhibits a design (198) for embanking the river, but only in a view. It is evident, however, that on the north side he would contemplate two roadways—a high-level and a low-level, the latter passing under the bridges, and the former intersecting their causeways at the ends. The low-level roadway would be lined, of course on one side only, by shops or other premises, forming the substructure of the high-level way. But, we must repeat, views are of no use without drawings to measured dimensions; and how exhibitors can omit to give the information that plans, elevations, and sections alone can afford, is inconceivable in an exhibition addressed to architects.

Perhaps the best illustration of the decorative character of a recently-erected building is comprised in the two views (143 and 147), and the photographs of details (144), of the seat of Mr. Manners Sutton, Kelham Hall, Newark, Nottinghamshire, by Mr. Scott; though no plan is attached. The general character of the Gothic, which is expressed in red brick and stone, might be anticipated by those who are familiar with Mr. Scott's recent manner, which may be said to have started with his Hamburgh Town-hall design, moulded on the architecture of Mediæval works of the class in Flanders, Belgium, and the Netherlands, and to have culminated in his competition designs for the Government Offices, which came subsequently to the commotion raised by Mr. Ruskin about Italian Gothic. Assertions made about the time of the competition, touching a want of scope in the Gothic style for the expression of modern ideas, put Mr. Scott on his mettle to prove the contrary; and he has ever since proceeded as though the object of designing were to exhibit the greatest possible variety of details, yet to show that those of common or vulgar use could be dispensed with at will. Such variety, along with good carving, for which some of the credit is due to exertions which he has made in connexion with the Architectural Museum, are very marked in this design, in which we find pointed-arched windows of Early "Decorated" character and cusped sub-arcuation, other windows with horizontal lintels below the arch, and the *tympana* pierced,—arrangements always reviving the question whether rooms are properly lighted and ventilated in the upper part,—windows of the Venetian Gothic type, or square-headed with tracery; parapets and balconies filled in with diminutive shafts and trefoliated arches; dormers, oriels, window architraves of Renaissance character; and a clock-tower, straight-sided, and finished with some form of gabled roof or pyramidal capping, and with a lantern. Such is the style that Mr. Scott has formed and may be recognized by; though we might wish some features of it otherwise than they are. But we do not know that the architect has used the general features with better effect decoratively, than in the design for Kelham Hall. Mr. Scott also exhibits several views (197) of the Westminster Chapter-house, showing the proposed restoration; and the "Reredos—Lichfield Cathedral" (305); whilst from the hand of Mr. J. D. Wyatt, we find (239), the chapel about to be erected for St. John's College, Cambridge, (designed by Mr. Scott), the subject of our illustration last week.

Mr. Truefitt exhibits a large drawing (226) which includes views of numerous buildings that he has designed and superintended in thirteen counties, and representations of sundry monuments, fittings, and articles of furniture. Amongst the objects that are of minor dimensions, are the Manchester Cathedral font and cover; and amongst the houses are several, in the neighbourhood of Holloway, in which whilst mullions are abandoned, some of the best features of the Gothic are retained, the result being works that help to prove, what many even have to learn, that plain and cheap construction, and good effect, are not inconsistent with one another.

We have not yet finished.

## BRITISH SCULPTORS.

### THE FAMILY OF "THE CURES."

A CATALOGUE of English sculptors exhibits a succession of sculptors in the same family:—Thus we have the family of "the Cures," *temp.* Queen Elizabeth and James I., the family of "the Stones," in the reigns of James I. and Charles I.; the large family of "the Christmases," in the same reign; the elder and the younger Bacon in the long reign of King George; two "Theeds," two "Wyons," and a long generation of "Westmacotts;" and yet our sculptors have in many remarkable instances been childless of any progeny beyond men and women, and gods and goddesses, in marble and plaster. Roubiliac died childless, Nollekens died childless, Flaxman died childless, Chantrey died childless, and all four were married men. Cibber left a son, who took, not to his father's compasses and chisels, but to literature and the stage. Gibbons had a family of daughters; Wilton left a lovely daughter immortalized in "Boswell," and a son long remembered *out* of his father's calling, as "Beau Wilton," and nothing more. What I have to tell in my present communication will relate to "the Cures."

There was living in Southwark, in the City of London, when (1603) King James I., removing the Tudor griffin, brought the Scottish unicorn into the Royal arms of England, a certain *Cornelius Cure*, sculptor, and servant of Queen Elizabeth, holding and exercising the office of "Master Mason" to the Crown. *Cornelius* was continued in his office by King James, and dying in 1607, without a will, administration of his effects was granted to his son *William*. *William*, with his father's good luck (how unlike the Hanoverian dismissal of Wren for Benson), succeeded his father as master-mason. *Cornelius*, at the time of his death, was busy on the monument of Mary Queen of Scots for Henry VII.'s Chapel, in Westminster Abbey, and *William* Cure, his son, completed and erected the Mary monument; that monument which *alone* preserves to us (in spite of Mr. P. F. Tytler and Mr. Albert Way), the *true* portraiture of Mary Queen of Scots.

In Southwark, in St. Saviour's Church, the church immediately adjoining the parish of St. Thomas the Apostle, is a monument to Thomas Cure, saddler to Queen Mary and to Queen Elizabeth. The saddler died in 1588. What relative was this Cure, saddler to the Queen, to the Cure who was master-mason to the Queen? Mr.

Corner, F.S.A., who is "well up" in all Southwark matters, will, perhaps, assist a future historian of English sculpture with the information he requires. The records of Cure's College, in Southwark," will, in all likelihood, throw some light on the point.

With the metal work of the Mary monument Cure had nothing to do. Witness the following entry, to which some years ago I directed my friend Mr. Albert Way's attention.

"To *Thomas Bickford*, smithe for making and setting up an iron grate for the tombe sett up in Westminster Abbye for the late *Quene of Scottes*, conteyning in compasse 14 foote and in heighte five foote besides the garneshments being all well wroughte and the garneshments & pillars clene filed—CIIIJXV." [*i.e.* 195*l.*]*

Cure's "pay" for his portion (the marble work) of Mary's "tomb" was in all 825*l.* 10s., or two thousand pounds at least of the money of the present day. To this we must add 195*l.* to Bickford for the metal work about it, and 265*l.* to James Mauncy for the painting and gilding.—some 1,350*l.* of Queen Victoria money more. The "Issues from the Exchequer," printed by Mr. Devon, contain these entries: Mr. Wornum, Walpole's last editor, has entirely overlooked them.

Another example of William Cure's skill in his art is the Tomb at Cranford, in Middlesex, of Sir Roger Aston (Master of the great Wardrobe to King James I.), his two wives, four daughters, &c. Aston's agreement with Cure is in print;† and I the more readily refer to it here, as the "terms" "conditions" and "percentages" made with sculptors and architects, have been the subject of a curious and not very satisfactory correspondence in the columns of the *Builder*. In this agreement he describes himself as "William Cure, Esq., of St. Thomas the Apostle, in Southwark," and undertakes (4th January, 1612), for the sum of one hundred and eighty pounds (180*l.*), "well and sufficiently, and workmanlike, to the best of his power, art, and cunning, in good and artificial order, to hew, cut, work, carve, make up, and finish, of alabaster tutch, rance, and white and black marble, one tomb or sepulchre for the said *Sir Roger Aston*, and his two wives and four daughters, with the seven pictures to be kneeling upon the same, and the same tomb to be of length, breadth, and fashion of a pattern drawn by the small sort, subscribed with the hand of the said Sir Roger Aston and William Cure, and remaining with the said William Cure in all points as comely and cunningly, and with as much work as the same pattern doth purport and signify, with all manner of arms, scutcheons, and superscriptions that shall be desired by the said Sir Roger Aston, his heirs, executors, or administrators, and the said tomb so to be made and finished as aforesaid, the said *William Cure*, his executors or assigns, at his and their costs and charges, as well in carving, as in and by all manner of stuff and workmanship, shall cause to be *set up, placed, fully finished, painted and gilded, in the parish church* of Cranford, at or before April 30 [1613]."

Let my readers who have not an opportunity of seeing the Cranford monument look at it as it is engraved in the "Environs" of Lysons. An experienced eye in estimates, with the monument itself before him, could doubtless calculate to a pound what the cost would be of a monument of a like description and size, and by a sculptor of a like reputation to Cure's, at the present day.

This same *William Cure* of ours worked under Inigo Jones at the Banqueting House at Whitehall. As master-mason to the Crown, Inigo as surveyor of the Works to the Crown was bound to employ William Cure. Nor will a mason of the present day find fault with the goodness of the work which Cure performed, viewed, as it is now to be viewed, after two centuries and a half of London smoke, and some coarse restoration and picking out. Cure's remuneration will excite a smile among our friends, in and out of the famous masons' strike. This skilled master-mason to the Crown, with Inigo Jones to look after him, was paid from the 1st of June, 1619, to the last of February, 1623, at the rate of eighteen pence per day, and for fees for the same period at twenty marks per annum. My father, as master-mason and foreman to Sir Francis Chantrey, was—taking the difference of moneys and the price of provisions into consideration, and Cure's wardrobe allowance withal,—no better paid, if indeed as well.

*William Cure* continued master-mason to the Crown until his death. He was buried in the church of the parish in which he lived, the register of St. Thomas the Apostle, in Southwark, containing the following entry, now first published (price to the writer for fees for searching, only five shillings):—

"1632, *Aug.* 4. *Buried William Cure, Esq., the King's mason.*"

I like the *esquire* of the entry,—*Sir* Inigo that "would be" was nothing more.

This "calling up" of the church of St. Thomas the Apostle, in Southwark, reminds me very pleasantly that the sculptor of Shakespeare's bust and tomb at Stratford-upon-Avon, in Warwickshire, was "Gerard Johnson, a Hollander, in St. Thomas Apostle's." This, Dugdale, a herald, antiquary, and the historian of Warwickshire, assures us. I regret to add that a long and costly attempt I made to unearth this Gerard Johnson in the registers of St. Thomas the Apostle was to no effect.*

Cure's successor in his office of master-mason to the Crown was Nicholas Stone, of whom there is an account in Walpole. To what Walpole has said of Stone I shall have something to add in a future communication.

PETER CUNNINGHAM.

* Works Accounts of the Crown in the years 1613-1614, formerly in the Audit Office, Somerset House, now at the Record Office, Chancery-lane, London (see a like entry in Harl. MS., 1653). Harley, Earl of Oxford's brother, was an Auditor of Imprests.

† *Gentleman's Mag.* for Feb, 1810.

* I have said in my "Handbook of London" (second edition, p. 493), under the head of St. Thomas the Apostle, Vintry Ward, that Gerard Johnson lived in that parish and ward. I am now convinced of my mistake, and feel assured that Gerard Johnson lived, like Cure, in St. Thomas the Apostle, Southwark, near to the Globe Theatre, and that he must have often *seen* Shakespeare. If I am right in this conjecture, the Stratford bust becomes additionally valuable as a *likeness*.

## OPENING OF THE BAHIA AND SAINT FRANCISCO RAILWAY.

A CORRESPONDENT writing, February 11th, from Bahia, says,—You will be glad to hear that the Bahia and St. Francisco Railway was opened for traffic on the 31st of January; Mr. Hutton Vignoles (the resident engineer) taking charge of the train which brought us down. We had the president of the province and a commission of engineers up from Bahia to examine it, who pretended to be very wise; but there was not a man amongst them who appeared to have any idea how the work had been executed; and they were continually making absurd mistakes and exposing their ignorance. Before you receive this, you will have known of the diplomatic breach between the Brazilian Government and the English minister Christie, which led to the seizure of Brazilian vessels by English men-of-war. There is a strong feeling against the English in Bahia; but as yet none has been molested or insulted; the precaution having been taken to send up an English frigate, the *Satellite*, the day the mail steamer brought the news from Rio. Mr. Dick, the superintendent, purposed inaugurating the opening of the whole line of railway by a dinner and a ball on the 4th inst., to which he, of course, invited the President. To his astonishment, the President said he would not be responsible for the safety of the guests, in case of a disturbance by the mob: so the affair was put off, and notice given in the public papers on the morning of the day on which it was to take place. Mr. Ogilvie gave a dinner to the workmen on the 6th inst., which was attended by the resident engineer and others, and went off well. The health of the engineer in chief, Mr. Vignoles, sen., was drunk enthusiastically.

## ITALIAN ARCHITECTURE AND ITS VARIOUS EUROPEAN OFFSHOOTS.

At a meeting of the Liverpool Architectural Society on the 25th ult., the second part of a paper by Mr. Samuel Huggins was read. It was a Historical and Critical Survey of early Renaissance, Cinque-cento, and modern Italian Architecture, treated as one continuous style or connected series of styles, tracing its various mutations from its earliest dawn to the present century, and its varied branchings into all the countries of Europe, including its career in Spain, France, England, Germany, the Netherlands, Russia, and the Scandinavian lands, with a descriptive and critical account of the most noted and typical edifices in each style. It is to form the concluding part of a volume shortly to appear under the title of "The Course and Current of Architecture; being a History of its various simultaneous or successive Phases in all Times and Countries." In his introduction, the author remarked that Italy, the hotbed of art, which had witnessed the full development and application of the columnar system of Greek architecture, and its coronation by arch and dome, became the scene of its revival. The first awaking of antique art in the West was owing to the increased intercourse occasioned by the Venetian conquest of Constantinople in 1203, between the Italian and Byzantine artists, among the pupils of which latter was Nicolo Pisano, the father of modern sculpture. In his architectural works—for he was architect as well as sculptor—we saw the earliest dawn of modern architecture which first assumed that unique form which had received the name of Renaissance—a style distinct from the Gothic of Italy, which it superseded, and from the more purely antique, to which it led. He had placed the day-spring of the Italian style at an earlier period than it was generally referred to, and to an earlier period than might be at all supposed auspicious to such an event. It was a book-burning, heretic-hunting age: philosophers, and particularly mathematicians, were looked upon as dealers in the black art, or at least as of doubtful orthodoxy. Of mathematics and physics even the clergy were ignorant—so ignorant that, as Anthony à-Wood says, they knew no property of the circle but to keep out the devil, and thought the points of a triangle would wound religion.

But this thirteenth century witnessed a change in more than one department of intellectual inquiry. It was a significant fact that painting and sculpture and architecture became freed from their thraldom at the same time as physics and mathematics. Cimabue, N. Pisano, and Arnolfo, of Florence, the fathers of painting, sculpture, and architecture respectively, were contemporary with Roger Bacon, the founder of experimental philosophy, by which tyranny and persecution were doomed. The waters of barbarism still flowed over Europe, but they were abating. Italy, the Ararat of the intellectual world, was heaving her head above the floods; and art, like the dove from the ark, could not find rest for her foot. In the thirteenth century, the schoolmen, with Aquinas and Duns Scotus at their head, were still all potent in Europe; but on the threshold of the next appeared the three renowned fathers of Italian literature, Dante, Petrarch, and Boccaccio, whose contemporary was Giotto, one of the greatest names of which the art could boast. The next great architect to Arnolfo was Giovanni da Pisa, the architect of the Campo Santo, at Pisa, perhaps the most beautiful cloister in the world. This was an attempt at the new style, which was formed by a blending of the two styles, Gothic and Classic. Mr. Huggins entered into a full description of the general style and of its system of decoration, which had other sources than the Gothic and Antique, in the gorgeous styles of Byzantium and the Saracens through Venice and Sicily. This style he considered reached its perfection of beauty in the fifteenth century, at Venice and the Venetian cities, and in Lombardy. The Certosa, at Pavia, and the court of the great Hospital, at Milan, were transitional specimens conducting to the full Italian or Cinque-cento style. This Renaissance was the general style of Italy till the end of the fifteenth century, when it gave place to the Cinque-cento or full-grown Italian, which had first appeared in the works of Brunelleschi about 1430. It did not, however, cease to be practised on the introduction of the severer style, but continued in Italy, and was employed concurrently with it; and it was from this later development of the style that the various Transalpine versions of it were derived, and not from the earlier phases, the Tre-cento and earlier part of the Quatro-cento.

These Transalpine offshoots stand at different distances behind the parent style in Classic beauty as well as in consistency and truth, from the antique being less understood, and its charms less felt, in the West than in Italy. In each western country, too, what was derived from the Italian was greatly modified, not only by artistic disabilities and inferiority of resource, but by peculiar national feeling. As the same seed falling on different soil must produce different fruit, so these Renaissance styles of Europe, though they had their source in the same parent style of Italy, soon diverged very widely apart and became very different phases of art. They generally showed the same predilections as regards form and proportion, as well as decoration, which had been exhibited in the national Gothic. He entered into a full description of the complete Italian style which first appeared in tolerable perfection in the works of Brunelleschi and Alberti; and pointed to

several edifices of the Italian peninsula which illustrate it, and to the leading architects who wrought in it and by whom it was brought to perfection. Among the celebrated examples of the perfected Italian architecture he cited, a considerable difference might be observed in the mode or manner of applying the antique elements to modern purposes, arising chiefly from local circumstances of different cities of Italy. Local distinctions had become visible at an early period of the Italian Renaissance; but now we had three distinct schools,—the Florentine, the Roman, the Venetian,—founded respectively by Brunelleschi, Bramante, and San Michele. Mr. Huggins entered into a description of these schools, and pointed out their leading characteristics. It was to the Venetian was due the honour of having best succeeded in adapting the antique architecture to modern wants. The works of its founder, San Michele, at Verona, and Sansovino at Venice, while they were among the most successful ever reared for harmony and beauty of form and proportion, and refinement and elegance of detail, exhibited the Classic style completely bent to modern uses, and re-formed on modern ideas. Palladio was their true disciple, and followed in the same spirit, enlightened and refined by the practice and influence of contemporary schools and further study of the antique.

After no great lapse of years these three schools became less definable. As the Florentine school arose earliest so it appears to have been earliest lost. It imbibed the spirit of the Roman, and at length lost its own distinctive character. The Roman again assimilated to the Venetian, which spread throughout Lombardy and became the chief source of the succeeding style of Italy, and mainly supplied the various streams of art in Transalpine Europe; Spain, France, England, Germany, and Belgium equally following, in a manner characteristic of each particular country, in the footsteps of Venice. This style was sometimes called Palladian from the fact of Palladio having fully developed and absorbed into his own system the styles of his great predecessors of the school, and from his having greatly amplified the resources of the school or sub-style by introducing into it what would harmonise therewith of the Roman school. He remarked that no style was ever more bountifully aided by the sister arts of painting and sculpture than the Italian; and after describing the two great systems of ornamentation wrought out for it, the Arabesque and the Pictorial, he entered into a defence of the omission of symbolism, by which this style differed from the preceding Christian styles. The æsthetic ornament replaced the symbolic of the Gothic because symbolism was felt to be no longer needful; Architecture's office of teacher being superseded by the printed page, on the invention of printing and diffusion of education among the people; since which event doctrinal truths were best inculcated, and the will and the affections would be most powerfully operated upon through the medium of literature. The modern Italian system of architecture was carried on in tolerable purity till the time of Bernini and Borromini; and the latter half of the sixteenth century witnessed the creation of edifices of great merit, though not equal to earlier works. By the two last-named architects, novelty being sought for its own sake, and with little regard to beauty, the style became corrupted; till at length, towards the latter end of the seventeenth century, it appeared quite a degenerate variety of the original style. About the middle of the seventeenth century the singular style of ornamentation called the Louis Quatorze was introduced from France, where it had been developed and perfected. It was succeeded by the Louis Quinze or Rococo style, which was little beyond a debasement of its predecessor. Improvement dawned in the eighteenth century on the manner bequeathed by Bernini and Borromini, and the style was pursued by Galilei and Ivara, and by Vanvitelli, who designed the Caserta Palace at Naples.

After tracing the parent style through all its phases, the author entered into a description of its different branches in western and northern Europe. Owing to Spain being more exclusively Catholic and under the influence of the Roman clergy, it was the first country that received the Italian Renaissance, which entered the peninsula in the reign of Isabella, to pursue a very different course from that it had run in Italy or was destined to run in France and England. The spirit and character of the Middle Age, which in Spain, coloured by Moorish poetry and art, legend and romance, had attained to its utmost perfection, and reached its last exquisite bloom—which had manifested itself so vividly and beautifully in the preceding Romanesque and Gothic, Saracenic and Mozarabic styles—continued and survived longer in that country, embalmed in manners, ways of thinking, intellectual culture, and works of imagination and poetry, than in any other. It was to this,—to her escape from the convulsions of the Reformation, and to the enormous wealth that was poured into her lap at the close of the fifteenth century by the discovery of America, and to the direct and potent influence of the poetic art of the Moors,—were owing the extraordinary richness and beauty of the architecture of Spain, rather than to any superior aptness for architectural conception and design on the part of the Spaniards. Mr. Huggins went on to describe the style and to trace its mutations to the present time; and then proceeded to the French branch, an interesting one, and from that to the English, German, Dutch, Belgian, Scandinavian, and Russian branches; and concluded by remarking upon the folly of the present hankering after a new style, all the styles that had hitherto arisen having been the result of circumstances the like to which had not occurred in our age.

## ON THE HISTORY OF ENGRAVING.*

The art of *chalcography*, or taking impressions from *copper-plate engravings*, is supposed to have been invented in Germany about 1450, and thus to be coeval with the art of printing with movable types. Some writers of high authority, however, affirm that we are indebted for the origin of this art to the ingenious Florentine sculptor, Masio Finiguerra, who discovered it accidentally.

Pure line engraving is the oldest mode of copperplate engraving. It is nothing more than drawing elegantly on metal. The design is traced upon the plate, which must be perfectly smooth and polished, with a sharp tool called a *dry point* or *etching needle;* and the strokes are cut or ploughed upon the copper with an instrument of an angular form distinguished by the name of *graver* or *burin*. In the first state of the art the lines are comparatively rude, and the value of those productions chiefly consists in the correctness of the drawing. As early specimens of line engraving, when compared with later ones, show the gradual progress of the art, and as the impressions are very rare, they are eagerly sought after and highly prized by collectors.

Like some of us, engraving wisely improved its state by a happy marriage, with the issue of Albert Durer. This immortal artist invented, about 1517, that species of engraving known by the name of *etching*, the process of which is as follows:—The plate is heated upon a stove with a charcoal fire, so that it may not be smoked: a piece of etching ground, which is a composition of virgin wax, asphaltum, Burgundy pitch, &c., incorporated by melting over a fire, and capable of resisting the action of aquafortis, rolled into the form of a ball and tied up in a little silk bag, is rubbed over the surface of the plate. The heat of the plate causes the ground to melt and come through the silk on the copper; then a small dabber made of cotton wool, tied up in a piece of taffety, is quickly dabbed all over the face of the plate while yet warm, in order to make the wax or etching ground which covers it of uniform thickness: the ground is then held over the smoke of a wax candle to blacken it, and the plate is left to cool: it is then ready to receive the design. This is traced with a black-lead pencil on a piece of thin paper, and laid with its face downwards on the etching ground covering the copper plate, and then passed through a rolling-press, which causes an impression of the outline to be transferred on the smoked ground. The design thus transferred on the etching ground is cut through with etching needles, and the strokes thereby produced are bitten or corroded into the copper with aquafortis. It was the happy union of line engraving with this discovery of Albert Durer's which, through skilful treatment, produced the masterly prints of Gerard Audran and others.

Next in point of age is the invention of engraving in *dots*, which was practised about the year 1510. The dots are effected in several ways, and are used either for the whole or certain parts of the engraving. Dots without strokes are executed with the dry point or etching needle, upon etching ground, bitten in with aquafortis, and are afterwards harmonised with the graver, by means of which instrument small dots are made. Sometimes the graver alone is used to express the flesh and the finer parts of the picture. In the print of Domenico Campagnola, about 1570, representing "St. John the Baptist holding a Cup, and looking upwards," the background is expressed by round dots, which appear to have been made with the dry point or etching needle. The outline of the figure is put in with a deeply graved stroke, finished within with dots, and the hair and the beard are expressed by strokes; whilst Agostino de Musis, pupil of Marco Antonio, expressed the flesh only in dots in several of his pictures. Though the art of copperplate engraving could now count its great masters by scores in Germany, Holland, France, and Italy, it made its way very slowly to England. As late as the year 1590 there was hardly such a thing to be found as an English copperplate engraving. Sir John Harrington, in his translation of Ariosto, published in the year 1591, informs us that he "never but once saw pictures cut in brass for any book except his own, and that book was Mr. Broughton's treatise on the Revelations."

Another important style of engraving is that which is distinguished by the appellation *mezzotinto*, invented about the year 1642. It is executed by raising a uniformly dark barb or ground on the plate by means of a toothed tool. The design is then traced upon the plate, and the bright parts are scraped off with instruments in proportion as the effect may require it. The invention of this style of engraving has commonly been ascribed to Prince Rupert. But whatever may be the doubts about his having originated this style of engraving, there can be no doubt that the honour of having first introduced it into England belongs to the Prince.

The last species of engraving we have to mention is *aquatinta*, which derives its name from its resemblance to water-colour drawing. As in etching, the design is first traced upon etching ground, and afterwards a sort of wash specially prepared for the purpose is laid on by the means of aquafortis. By this mode of engraving, which was originally invented by Le Prince, a French artist, about a century ago, drawings in Indian ink, bistre, and other washes are very successfully imitated. Such are the different styles of engraving which, as we shall hereafter see, are beautifully adapted by the skilful artist to different subjects. We shall now glance at the development of this art in the different countries in which it was practised.

Though the art of engraving in the common acceptation of the term is comparatively modern, not being older than the invention of printing in Europe, yet its progress must not be judged by its age. It grew into a giant almost in its infancy, as may be seen from the productions of the early masters in Italy, France, Germany, and Holland. To enable you to see this, as well as help you to enter into the peculiarities of style, and the distinguishing features of each school, we shall review some of the works of the most eminent masters, according to their countries, and in chronological order. As Germany is supposed to be the country where prints first made their appearance, we shall begin with it.

Of the earliest masters of Germany, viz., Michael Wholgemuth and William Pleydenwurff, who published, in 1493, the celebrated *Nuremberg Chronicle*, with woodcuts; and of Martin Schoen and Von Mechelu, who engraved on copper, I can show no specimens. Suffice it to say, that their works are more rare and curious than beautiful. Not studying from nature, and not having the advantage possessed by the Italians of being able to refer to the remains of Greek art, the early German artists are defective in drawing: their naked figures are incorrect in the outlines, meagre and emaciated, and look as if a few hearty meals of English roast beef and plum pudding would have done them good.

These were followed by the immortal Albert Durer, the inventor of etching (1471—1528), who created a new epoch in Germany both in woodcuts and in line engraving. Of his success you may judge for yourselves from the following specimens. So highly were his talents appreciated, that the Emperor Maximilian, who often visited his studio, after gazing with admiration and delight at the print of the "The Conversion of St. Eustachius," ordered that the copperplate should be filled with gold; anxious, ere its beauties should become faded, to enshrine for ever the wonderful work.

Next in rank are Lucas Cranach (1470-1533), the friend of Luther and Melancthon, who, through the influence which he exercised by his great skill in taking accurate portraits and in delineating birds and beasts, had numerous imitators; the brothers Bartel (1496-1550), and Hans Sebald Beham (1500-1555), who studied at Rome under Marc Antonio Raimondi, whose prints are deservedly held in very high estimation and greatly

* From a paper read by the Rev. D. C. Ginsburg, LL.D.

sought after by collectors, and who, together with the renowned Henry Aldegeever (1502-1565) are denominated the *little masters*, on account of their prints being generally small; and lastly, the brothers David or Daniel (born 1510), and Jerome Hopper (born 1535). These constitute the principal masters of the early German schools of engravers, to whom we may add Melchior Lorich, or Lorch (1527-1586), who engraved both on wood and copper in a bold, free, and neat style; and the exquisite etcher Jonas Umbach (1624-1700), whose works are very spirited.

Passing over the other masters, we come to the renowned James Frey (1681-1752), better known by his Italian name, Giacomo Frey, who studied in Rome, and who was the founder of a new school in Germany. Few artists have approached nearer the style of the painters from whom they engraved than he. Whilst Frey introduced into the German school the gracefulness of the Italian artists, Justus Chivellet (born 1729), who studied under the celebrated George Wilke, taught his followers the neatness of the French school. With equal success did James Philip Hachest (1737-1807) labour in the department of etching, as may be seen from the prints, which are executed with great fire and spirit. We must conclude this school with the two Müllers, father and son, of whom Germany may justly be proud. The father (1747-1830), who only engraved thirty-three plates, immortalised his name by his engraving of the Madonna della Seggiola, which is considered by many a superior print to that of the same subject by Raphael Morgheu. The son, Christian Friederick von Müller (1783-1816), who surpassed his father, engraved only sixteen plates, owing to the shortness of his career; for he fell a victim to the art he so fondly loved, when he was only thirty-three years of age. He was engaged by Rittner, a printseller of Dresden, to engrave the Madonna di San Sisto of Raffaelle, in the Dresden Gallery, and entered with heart and soul upon the execution of the work, which he finished in a manner worthy of himself and the sublime painter. But when he brought the first proof to his employer, the mercenary man shook his head, and told him that he must go over the whole plate again, and retouch it throughout, for that such delicate work would not throw off a sufficient number of impressions to answer the trade purpose. In vain did Müller remonstrate with the £. s. d. man, and he was compelled to rework the plate. At every touch he felt as if his life-blood were departing from him, and that he was sacrificing genius to gain; and by the time he completed his labour he was broken-hearted, and died on the very day on which the first proof was taken from the retouched plate. This proof impression, which he did not live to see, was suspended over the head of his bier as he lay dead; thus reminding the spectators of the similar untimely fate of the great master of the original.

We now come to *the Dutch and Flemish school*, which, though younger by nearly a century than the German, has surpassed it both in the number of artists and the handling of the graver. Passing by the oldest masters, who date from 1510 to 1550, such as Jerome Coch, Adriam Collaeret, Hans Bol, &c., of whose works the following are fair specimens, we notice Cornelius Cort, who went to Italy, resided at Venice in the house of Titian, and there engraved some of his finest works. He afterwards went to Rome, where he established a school, and executed many of the excellent works which are the delight of the judicious collector, and instructed Agostino Caracci in the masterly use of the graver. The galaxy of engravers which appears above the Dutch horizon from this time is almost innumerable.

*The Italian school* is almost contemporaneous with the German, or, as some will have it, is older than the German school; and in dignity of composition, in unaffected drapery, in simplicity and grace, is superior to all other schools, especially in its early age. This arises from the fact that the Italian artists had the remains of the masterpieces of ancient Greece. The superiority of the drawing of the human figure in this school is, moreover, to be ascribed to the fact that the Italians drew all their figures in skeleton, then clothed them with flesh, and lastly arrayed them in drapery. The oldest specimen of this school which I can show is a print by Andrea Montegua, who was born in 1431, and died in 1505.

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SOCIETY OF BRITISH ATISTS. — The present exhibition in Suffolk-street consists of 893 paintings and drawings, and ten small pieces of sculpture, mostly by Messrs. Physick. It includes a number of very good landscapes. We shall return to it.

## "RICHMOND HILL IN '62."

MR. CROPSEY, the American landscape painter, whose "Autumn on the Hudson" was the great adornment of the United States' department of the International Exhibition, sought for a corresponding view to show Summer in England, and finding it on Richmond Hill, "loved by the Muses," has painted a parallel picture of great size. He has chosen well. Every one knows Royal Richmond, the *Sheen* (from the shining river) of former time; where Edward III., Henry VII. (from whose paternal estate in Yorkshire it had its present name), and Queen Elizabeth all died; where Henry VIII. jousted; where the Queen of George II. received Jeanie Deans; where Reynolds and Gainsborough lived; and which has been sung by Pope and Thompson.

The wall of famous "Star and Garter" is on the left of the picture: beyond is Petersham, with the grounds of Ham House, where the great Duke of Argyll was born: in the centre, or rather to the right of it,—

> "Wanders the hoary Thames along
> His silver winding way!"

Though, as the time chosen is the afternoon (just before going in to that very pleasant dinner), and a rich, warm sky gives colour to the river, it becomes, rather, the "*gilded* stream" of Thompson's verse. In the distance, which is capitally painted, is seen Windsor: everywhere are the beauties with which Nature is there so affluent; and in the foreground is a group of many figures of varied classes, the costume marking the period. These figures are of large size, and very cleverly presented. We congratulate Mr. Cropsey on having produced a charming picture of a charming spot, the first view of which ever leaves with the impressionable observer,—

> "A bright remembrance ne'er to be destroyed."

The picture is now at Mr. Henry Graves's, in Pall-mall, and is to be forthwith engraved by Mr. Robert Wallis.

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## RAILWAY TUNNELS.

### INSTITUTION OF CIVIL ENGINEERS.

AT the meeting, March 24th, Mr. Hawkshaw, president, in the chair, the first paper read was, "Description of the Lydgate and of the Buckhorn Weston Railway Tunnels," by Mr. J. G. Fraser.

It was assumed that the aggregate length of the tunnels now daily traversed by railway trains in the United Kingdom amounted to 80 miles; and supposing their cost to have been on an average 45*l.* per lineal yard, their construction must have caused the expenditure of six millions and a half sterling. Up to the present time this interesting branch of civil engineering had not been much discussed at the Institution, as the minutes of proceedings only contained accounts of a total length of about three miles, involving an outlay of about one quarter of a million sterling. Each tunnel had its own history, and its construction demanded peculiar treatment, according to the character of the strata, the springs of water, &c. If particulars of these works were transmitted to the Institution from time to time, more effectual measures might in many cases be practised, with advantage to public economy.

The tunnels forming the subject of this communication were both executed under the immediate superintendence of the author, as resident engineer for Messrs. Locke & Errington, the engineers-in-chief.

The Lydgate tunnel, on the Oldham branch of the London and North-Western Railway, was driven through the coal measures. A longitudinal section which accompanied the paper, prepared from actual measurements taken during the progress of the works, illustrated the geological details. Faults were common in this formation; sometimes severing it in the line of the dip, and at others in the line of the bearing. Several distortions were encountered, and at one point one-half of the tunnel was in strong shale and rock, and the other half in wet and loose shale. The total length of the tunnel was 1,332 lineal yards: of this about 1,046 yards were on a straight line, and 286 yards on a curve of 74 chains radius: its width was 25 feet at the level of the rails, with a height of 20 feet. Four permanent shafts, each 9 feet in diameter in the clear, were sunk at intervals of about 230 yards, of the respective depths of 53¼, 80, 75⅔, and 53 yards. They were lined with 9-inch brickwork, or with 12 inches of masonry, except in the rock. An old colliery shaft, which had been closed for many years, was also re-opened, and a cross heading was driven from it into the tunnel, a distance of 13⅓ yards. When foul air was met with, a supply of fresh air was forced into the workings by means of fans, until a junction was effected between the headings. There was a considerable amount of choke-damp in the neighbourhood of the old coal workings. To overcome its effects, a bore-hole was sunk from the surface, which was lined with an iron pipe, and through this fresh air was forced into the tunnel. The sinking of the shafts was carried on in the usual manner, by excavating through soft material, and by blasting and drilling through rock. The average rate of progress was 11 lineal yards per month. After attaining a depth of 20 yards, the material was raised by engine power.

A bottom heading was driven from the faces worked from the cuttings at each end; but with these exceptions the tunnel was mined by a top heading, 6½ feet by 4½ feet, first being made for the full distance of each length. The crown was protected by larch bars and poling boards; and, after the ground was secured, it was gradually widened out to the shape of the tunnel, the same description of timbering being continued to about 10 feet above the formation level. The contract price for the excavation, including the timbering, was 4s. 6d. per cubic yard. In the construction of a tunnel, the masons, or bricklayers, should, as a rule, commence the lining as soon as possible after the ground was prepared for them by the miners. The lengths mined at each face varied according to the nature of the ground; averaging, in loose shale, 3 lineal yards; through stony shale, 5 yards; and through rock, 8 yards, or in some instances 10 yards. The prices paid to the miners ranged from 8*l.* to 18*l.* per lineal yard, one-half of the total length amounting to 12*l.*, or less.

The centres used were skeleton ribs, set about 1½ yard apart; but at the leading ends two ribs were fixed close together. This description of centering was found to answer very well. The price allowed for setting each rib was 8s. The masonry of the side walls was of coursed rubble. The arch, for a length of 632 lineal yards was turned with fitted rubble; but, owing to the scarcity of good bedded stone, the remaining length was built of brickwork. The average quantity of masonry per lineal yard was 12⅔ cubic yards, and the contract price throughout was 20s. per cubic yard. The mortar was composed of Barrow stone-lime mixed with coal-ashes, in the proportion of 2 to 1, ground by heavy iron rollers, and used fresh. Its setting properties were most satisfactory. The spaces between the crown bars, called the mid-feather, were filled up with brickwork, and the bars themselves were left in where they had "sagged."

The first length of the tunnel was keyed in on the 27th of October, 1854, and the last was finished on the 21st of March, 1856,—a period of seventeen months, or equivalent to about 80 lineal yards completed per month, exclusive of the sinking of the shafts. The contract price for the tunnel was 26*l.* per lineal yard through rock, and 35*l.* 16s. per lineal yard through shale, the average price being about 30*l.* per lineal yard.

The Buckhorn Weston Tunnel, on the Salisbury and Yeovil Railway, was 739 lineal yards in length, 25 feet in extreme width, and 20 feet in height above the level of the rails. It was constructed through Kimmeridge clay, intersected with veins of loose rock. These veins acted as conduits for a large body of water, amounting to about ninety gallons per minute, which flowed in at the crown of the tunnel for nearly one-half its length. To remedy the evil effects arising from this volume of water a heading, 5 feet by 5 feet, was driven above the tunnel, and about 10 yards on the upper side of it, for a length of 200 yards. A pipe, 12 inches diameter, was laid in this heading, and the remainder of the space was filled in with loose stone. The water was thus intercepted, and conveyed away from the work. It was originally intended to execute this tunnel by means of a bottom heading, sufficiently large for ordinary waggons, from the cutting at the west end, and to sink two shafts. After the heading had been driven for a length of 200 lineal yards, it was found that the action of the atmosphere caused the sides to bulge in so much that this plan had to be abandoned. A smaller heading was then substituted, and three additional shafts had in consequence to be sunk. The shafts, which were only temporary, were 8 feet square, and were lined with timber. Their cost amounted to 1*l.* 10s. per lineal yard of tunnel.

The mining was performed in a similar way to that of the Lydgate Tunnel; a top heading being first driven from each shaft. The average price for mining and tipping was 4s. 6d. per cubic yard,

and the quantity amounted to 80 cubic yards per lineal yard of tunnel. The lengths mined at each face ranged from 3¼ lineal yards in heavy ground to 5 lineal yards in favourable strata. The average cost of mining was 30*l.* per lineal yard, exclusive of the shafts. The crown-bars were of larch, 18 inches diameter, and were fixed about 18 inches apart.

The centres were strongly braced, and were placed about 1¼ yard apart. Each rib contained 35 cubic feet of timber, and 285 lb. of wrought iron in bolts and straps, and the cost of setting amounted to 6s. per lineal yard of the tunnel. As side pressure was anticipated at the commencement of the work, the first ten lengths were built with an invert, which contained 4 cubic yards of brickwork per lineal yard. Further experience showed, however, that this was not necessary. The tunnel was built throughout of brickwork, upwards of six millions of bricks being used, and the average quantity per lineal yard of tunnel was 20 cubic yards. For a length of 390 lineal yards, where the water occurred, the work was 2 feet 8 inches in thickness. The spaces behind the brickwork were filled in solid, and throughout the heavy ground three bars were left in, on an average, in each length. As there was no sharp sand in the neighbourhood, burnt clay, fine sand, and broken bricks were ground together, and mixed with Bridgwater hydraulic lime, in the proportions of 2 to 1. The result was perfectly satisfactory.

The first length of this tunnel was keyed in on the 6th of October, 1858, and the last was completed on the 17th of February, 1860,—a period of sixteen months. The total cost had amounted to 53,000*l.*, or 72*l.* per lineal yard; detailed particulars being given of the cost of the different items.

## THE POLICE OF THE METROPOLIS.

IT is satisfactory to observe that the Government appear to be inclined to "improve" the late "occasion" on which the shortcomings of the police were so fatally manifested. And as this is a subject which in more than one instance, previous to recent doings,—or deficiency of doings, rather,—on the part of the police, has engaged our own attention and that of our readers, the opportunity is a fair one for a few further remarks on the subject, *pro* and *con.*, as we would not wish to look exclusively to the defective aspect of the police.

In order to prevent the commission of much crime, we certainly require, amongst nearly three millions of people, and in such a wide district, a larger police force; and not in the City alone. Indeed, in the City, where the beats of the policemen are shorter, and the men are more constantly in the way, there are fewer robberies, &c., committed, than in the more neglected metropolitan districts.

The increase of the number of the detective police is a step in the right direction; and the number of the force might with much advantage be still further enlarged. But there is in this country a great jealousy of, and objection to, a secret police. It would, however, be impossible, in the present condition of society, without this aid, to discover and check a large amount of crime. Taking them on the whole, the detective police, both of the City and the metropolitan districts, are men of much intelligence, and very ably do a difficult duty. In the busy thoroughfares, in crowded assemblies, theatres, concert-rooms, auction-rooms, churches, and at railway-stations, at the chief roads by which persons arrive in and depart from the metropolis, and in hundreds of other situations, the London detective may be seen in the most varied disguises, so skilfully managed that a man's wife would often fail to recognize him. At the corners of streets; near the railway stations; on the chief points frequented by the omnibuses, these policemen may be seen, in the dress of navigators, bricklayers, countrymen, &c., in search of work: at religious meetings we have heard of them assuming the garb of clergymen; and in a much frequented roadway we have met with a well-known officer in the shabby black suit of a poor country school-master, who produced written verses of his own composition, and for which he pretended he would be glad to find a publisher: we have heard of detectives who in certain situations have sold baked potatoes, and in others where they have swept a crossing. In the waiting-rooms of the police courts, and in those of the courts of session, the detective chamelion, in varied hues, according to the circumstances, mixes with those whom business has brought there; and in this way needful information is often obtained from those connected with the parties who are in trouble. Many would feel surprise at the ability with which these officers assume a character, and the skill and perseverance with which they maintain it.

The wardrobes of the detective police departments would present a curious picture, and form a subject worthy of thought; but these secret London interiors are, we suppose, only accessible to the initiated.

Believing that as regards the discovery of crime the detective force, not only of the metropolis, but throughout the country, is most useful; nevertheless, we are of opinion that it should not be too much relied upon as a means of prevention, which is no doubt a matter to which police attention should be chiefly directed, quite independent of the detectives: the regular policeman should be much more readily found when required than he now is. In such a thoroughfare as the Caledonian-road, for instance, it has frequently happened that a policeman has not been found until after an hour's search.

In some respects, the plan formerly in use was of advantage; for, although, in the provincial towns, in the daytime, there was no regular patrol, there were numerous constables, who lived in convenient situations at a short distance from each other, who, on the payment of 1s., could be called out when wanted. In the outlying metropolitan districts the police-stations are very wide apart. In order to remedy this defect, it has been suggested that small stations should be established at intermediate points.

As we have before said, the number of police in a district depends upon the amount of rate granted; and money employed in this way in suppressing or preventing crime, which the presence of policemen is sure to a certain extent to do, is well bestowed; and it is certain that even at present better arrangements might be made, particularly in the manner of changing the men, which often leaves most important neighbourhoods unprotected for an hour together. The thieves know this well, and gather in their harvest accordingly.

From time to time we hear complaints of the misconduct of some of the general police body; but remembering the large number of men who are employed in this duty, their behaviour is for the most part excellent: great care is taken, we believe, in the selection.

## THE METROPOLITAN RAILWAY SCHEMES.

A REPORT has been made to the Metropolitan Board of Works by their engineer, Mr. Bazalgette, on this subject, in which a few of the thirty-three schemes of the present session are reviewed. Of the thirty-three, already fourteen have been thrown out upon standing orders, or withdrawn; but still there remain no less than nineteen lines by means of which it is proposed to cut up the metropolis into slices, with little or no respect either to appearances or to vested interests, in the eligibility of districts for residence, or the value of property in such districts. The schemes which it is proposed to carry out above ground play havoc with whole streets: those underground destroy the sewerage and drainage,—so much so that in respect to one of the two or three reviewed in the report under notice, namely, "The Metropolitan, Tottenham, and Hampstead," Mr. Bazalgette says;—"The interference with the drainage of this district is so serious that the company should submit plans for the *re-drainage of the district* for the approval of this Board, and enter into an undertaking to defray the total cost of their constructing the new sewers, and for the supervision and other expenses, before their Bill is sanctioned." And in respect to one of the above-ground lines, the "London Railway, Victoria section," it runs through Chelsea and Brompton, knocking down streets and houses like an earthquake, only an earthquake keeps modestly underground, while the "London Railway, Victoria section," leaves its traces, or at least its viaducts and bridges, 18 and 19 feet high, as a permanent disfigurement, and a serious deterioration, of what remains.

"This railway," says the reporter, "which is not quite three miles long, and is to connect the London, Chatham, and Dover Railway, near to Victoria Station, with the West London Railway at Kensington, is about 18 feet above the general level of the surface, and passes over about thirty-two important streets and roads, the levels of most of which would be lowered, and the inclinations reduced to 1 in 30; and some of them, hereinafter mentioned, which are crossed twice by bridges close to each other and at different heights, would be rendered dark and very objectionable. The bridges would in some cases reduce the widths of the roadways; and this railway could not, in my judgment, be constructed without serious injury to the locality through which it would pass.

From Sloane-square and the portion of Sloane-street near to Trinity Church and schools, there will be three lines of railway forming a triangle, one terminating at Milner-street; No. 7, running nearly parallel to No. 1, and crossing the same streets, and terminating at Smith-street; No. 6, commencing at the end of Milner-terrace, and joining No. 7 at Smith-street. Dracott's-place would have two adjoining bridges: one would be 40·0 span and 19·0 high, the other would be 40·0 span and 18·0 high, and in the last case the road is proposed to be lowered 1·0. South-street would also have two bridges, being distant from each other only 50 or 60 feet; and, as in the last case, one bridge would be 18 feet high, the other 19 feet high. Cadogan-street is crossed by two bridges about 100 feet apart: one is described as being 40 feet span and 18 feet high: of the other no particulars are given. Moore-street will also be crossed by two bridges about 200 feet apart: the upper part of the street is proposed to be lowered 3·0, and the lower part 3·6, and the railway will pass over it by the two bridges, each 18·0 high.

Other streets in this immediate neighbourhood are similarly situate with regard to the crossings. Green-street, from Henry-street to Milner-street, will be entirely destroyed; the railway running along the street for a considerable distance. The large extent of property within the limits of deviation would indicate that this neighbourhood might be required for station accommodation, or other purposes.

Nearly the whole of the streets and roads over which the railway will pass will have to be lowered from 1 foot to 5 feet.

The lowering of Gloucester-road would lay bare the Church-street main line of sewer, which would project above the proposed altered road about 3 inches."

The House of Lords, we observe, have postponed for six months the second reading of the "Great Eastern Railway (New Metropolitan Railway and Branches) Bill," although an endeavour was made to save it on the ground that parts of it related to the North London line, and might be proceeded with in the present session.

## THE NEW WORKHOUSE, CARLISLE.

ON the day appointed to open the tenders for the new workhouse proposed to be erected for the Carlisle Union, the members of the board of guardians, assisted by Mr. Mawson, accepted the following:—

| | | | |
|---|---|---|---|
| C. & J. Armstrong (Carlisle), excavations, brick, and masons' work .... | £5,407 | 0 | 0 |
| Court (Carlisle), joiner's and carpenter's work ..... | 3,111 | 0 | 0 |
| Irving & Lowthian, plumbing, &c..... | 690 | 0 | 0 |
| Ditto, for extra lead work..... | 156 | 12 | 0 |
| Johnston (Carlisle), plastering ..... | 618 | 0 | 0 |
| Clark (Carlisle), ironwork..... | 429 | 5 | 0 |
| Hill & Sutcliffe (Bradford), slating (Westmorland slate) ..... | 681 | 10 | 0 |
| Stephenson & Company (Carlisle), painting, &c..... | 259 | 0 | 0 |
| | £11,352 | 7 | 0 |

Among the tenders for the whole of the work were the following:—

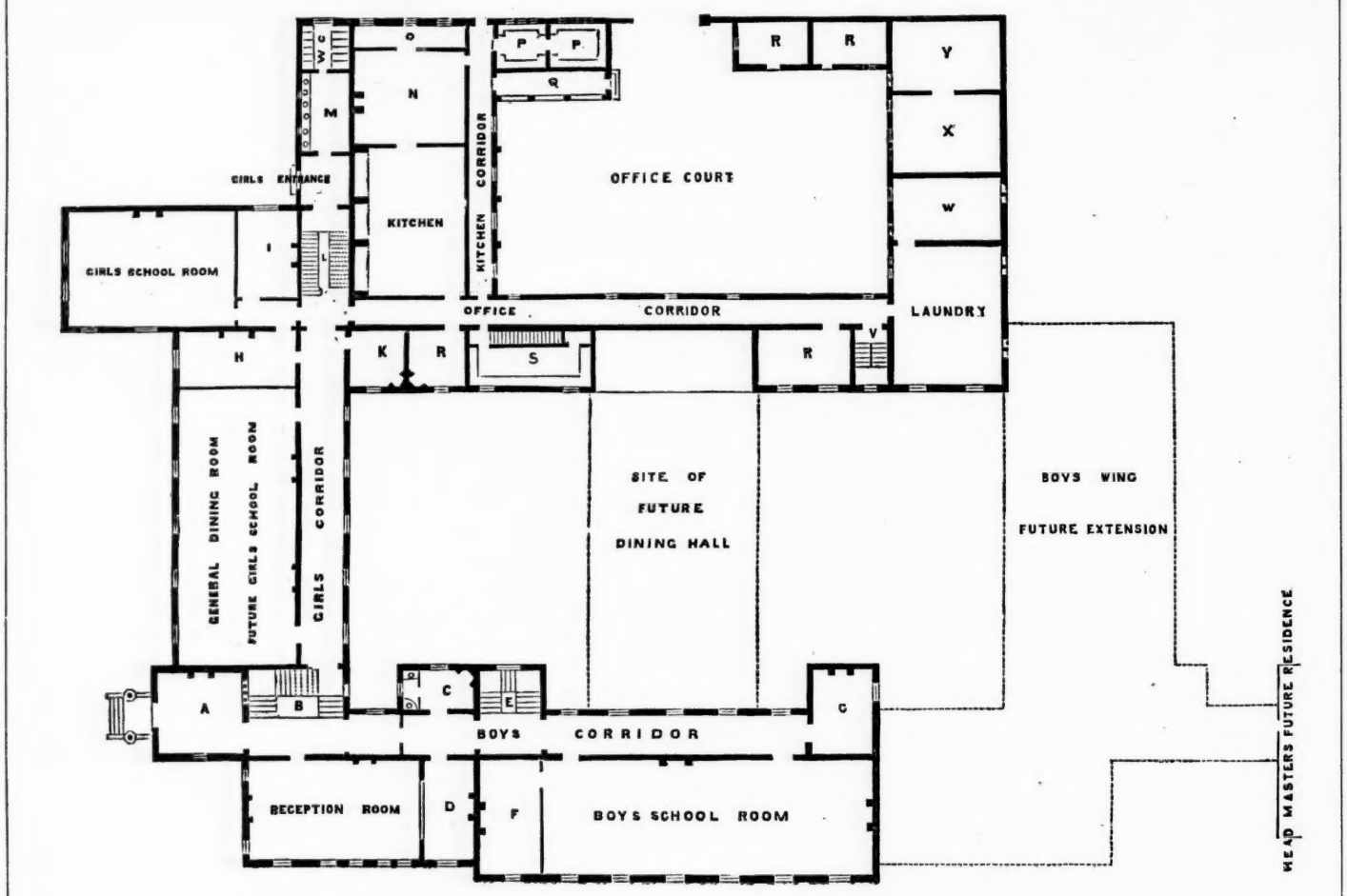
| | | | |
|---|---|---|---|
| Black & Milburn (Carlisle)..... | £12,374 | 0 | 0 |
| C. & J. Armstrong (ditto) ..... | 12,477 | 0 | 0 |
| T. Nelson & Co. (ditto) ..... | 13,968 | 0 | 0 |

## PRIZES FOR ART-WORKMANSHIP.

A COMMITTEE, consisting of Messrs. John Bell, Bowler, C. Minton Campbell, H. Cole, C.B.; J. G. Crace, W. Dyce, R.A.; F. Elkington, C. D. Fortnum, G. Godwin, Peter Graham, C. Hart, W. Hawes, W. Holland, M. D. Hollins, John Hunt, Owen Jones, Marsh Nelson, T. G. Parry, F. Pellatt, Sir Thomas Phillips, Messrs. R. Redgrave, R.A.; R. Riviere, Skidmore, F. G. Stephens, Godfrey Sykes, J. Webb, and M. D. Wyatt, has been appointed by the Society of Arts to report what prizes the Society should offer for the encouragement of art-workmanship applicable to manufactures; and, upon the recommendation of that committee, the council have decided to offer prizes for the successful rendering of designs in the undermentioned processes of manufacture:—

1. Modelling in terra cotta, plaster, and wax. 2. Repoussé work in any metal. 3. Hammered work in iron, brass, or copper. 4. Carving in ivory. 5. Chasing in metal. 6. Enamel painting on metal, copper, and gold. 7. Painting on porcelain. 8. Inlays in wood (marquetry or buhl), ivory, or metal. 9. Engraving on glass; and 10. Embroidery.

Designs by artists of great reputation will be named, to be translated into the various modes of workmanship; and photographs and castings of such designs will be sold at the Society's House, at cost price, to persons desiring to be competitors. The works to be executed will be considered to be the property of the producers, who will be required to state in each case the price at which their works may be sold. The awards in each class will be of two grades. The victors will probably be crowned publicly.




THE ASYLUM FOR MERCHANT SEAMEN'S ORPHANS.—*Plan of Ground Floor.*

## THE MERCHANT SEAMEN'S ORPHANS' ASYLUM, SNARESBROOK.

THIS building has been erected from the designs of Mr. G. Somers Clarke, to accommodate 130 boys and 75 girls, and is capable of extension to hold 400 children; pending which some of the arrangements are only temporary. The Institution provides for the support and education of the children of deceased and shipwrecked mariners. We give a view and plan of the building. It is externally of red bricks, made from materials on the ground; the fronts being relieved by black Ewell lacing courses, and the window heads and other arches throughout are also of black Ewell cutters and red Ballingdon cutters. The general stonework is from the contractor's quarries at Ancaster. The external walls of courts, and the internal walls of corridors, school-rooms, dormitories, kitchen, offices, &c., are faced with pale stocks made on the ground. The south front of the building is appropriated to the boys, and the west to the girls.

On the basement is arranged a covered play-room, 84 feet by 24 feet, facing the south front, and immediately under the boys' school-room: lavatories, urinals, water-closets, and a boot and shoe room are provided adjacent, and to which easy access is obtained by a corridor 8 feet wide, communicating by a staircase with the ground-floor of this wing. Under the kitchen offices are a range of cellars and store-rooms, with a distinct staircase from the girls' wing. The washhouse and engine-house are also on this floor, and have a separate staircase by which communication is maintained with the kitchen corridor.

The ground-floor has two main entrances; the principal one in the tower, and another in the girls' wing. The former has a porch designed after the type of those common to Northern Italy: the shafts are of Devonshire marble, with bases and slips of red Mansfield stone. The canopy surmounting the porch is designed for the reception of a group, in statuary, of Charity, or Britannia protecting young children of both sexes, emblematical of the objects of the Institution. A bas-relief of a shipwreck is already executed over the lintel of the doorway. The base of the south column of this porch was laid by his late Royal Highness the Prince Consort, in June, 1861. The entrance-hall is 17 feet by 17 feet, and is divided by an open arcade of two arches resting on three-quarter Devonshire marble shafts, and is vaulted with red hexagonal coffered bricks and Ancaster stone rib mouldings. The principal staircase is 21 feet by 17 feet, the steps of which are of Portland stone, and the floor of this and the hall is laid with Minton's encaustic tiles.

The girders of the ceiling of the reception or committee room are cased with pitch pine, and an ornamental screen across the room, supported on columns, is executed in the same material: the chimney-pieces are of alabaster and marble, inlaid with Majolica tiles. The boys' school-room is 84 feet by 24 feet, the floor being constructed of two half-brick rings carried on iron girders 12 feet apart, and the spandrils fitted in with concrete: upon this the floor is laid: the walls of all the school-rooms are faced with grey stocks, and the girders cased with pitch pine. Rooms are provided in this wing for the master, under-master, and secretary.

The corridors throughout are vaulted with hexagonal coffered bricks, the spandrils being filled in with concrete, and floated with Portland cement. In the west wing is the present dining-room, 60 feet by 24 feet. This will eventually be used as a girls' school-room, when the future dining-hall is built: the room used now for their school will then become a class-room. The girls' staircase is 17 feet by 11 feet, and constructed with York steps. Water-closets and a lavatory adjoin. The officers have a private dining-room, 24 feet by 12 feet, adjoining the present general dining-room. The kitchen is 30 feet by 21 feet, lighted from the roof by large lucarnes. The other rooms on the ground floor are scullery, girls' visitors' room, mending-room, china pantry, larders, laundry, and store-rooms.

On the first floor are two dormitories for boys, 31 feet by 21 feet, and 84 feet by 24 feet, overlooked from the master's bedroom. Water-closets and a lavatory are provided for them on this floor. The corridor is fitted with lockers that serve the purpose of a linen store. The matron has a bedroom and sitting-room in the tower.

The girls have a large dormitory 60 feet by 24 feet, and a smaller one for the elder girls 36 feet by 24 feet, lavatory 17 feet by 12 feet, mistress's bedroom 17 feet by 12 feet. The arrangement of the second floor is similar to the first, with the exception of temporary sick rooms in each wing, provided with nurses' rooms and lavatories complete, till a special building as an infirmary is erected.

The tower is used to contain water-tanks for the supply of the building and also for servants' bedrooms. Gas is laid on throughout the several floors.

Messrs. Kirk & Parry were the contractors: Mr. Earp was the carver; Mr. Jane, clerk of works; Mr. Wm. Kirk, contractors' agent. The gas fittings were by Strode & Hart; the kitchen apparatus and stoves by Jeakes; and the laundry fittings by Brown & Green.

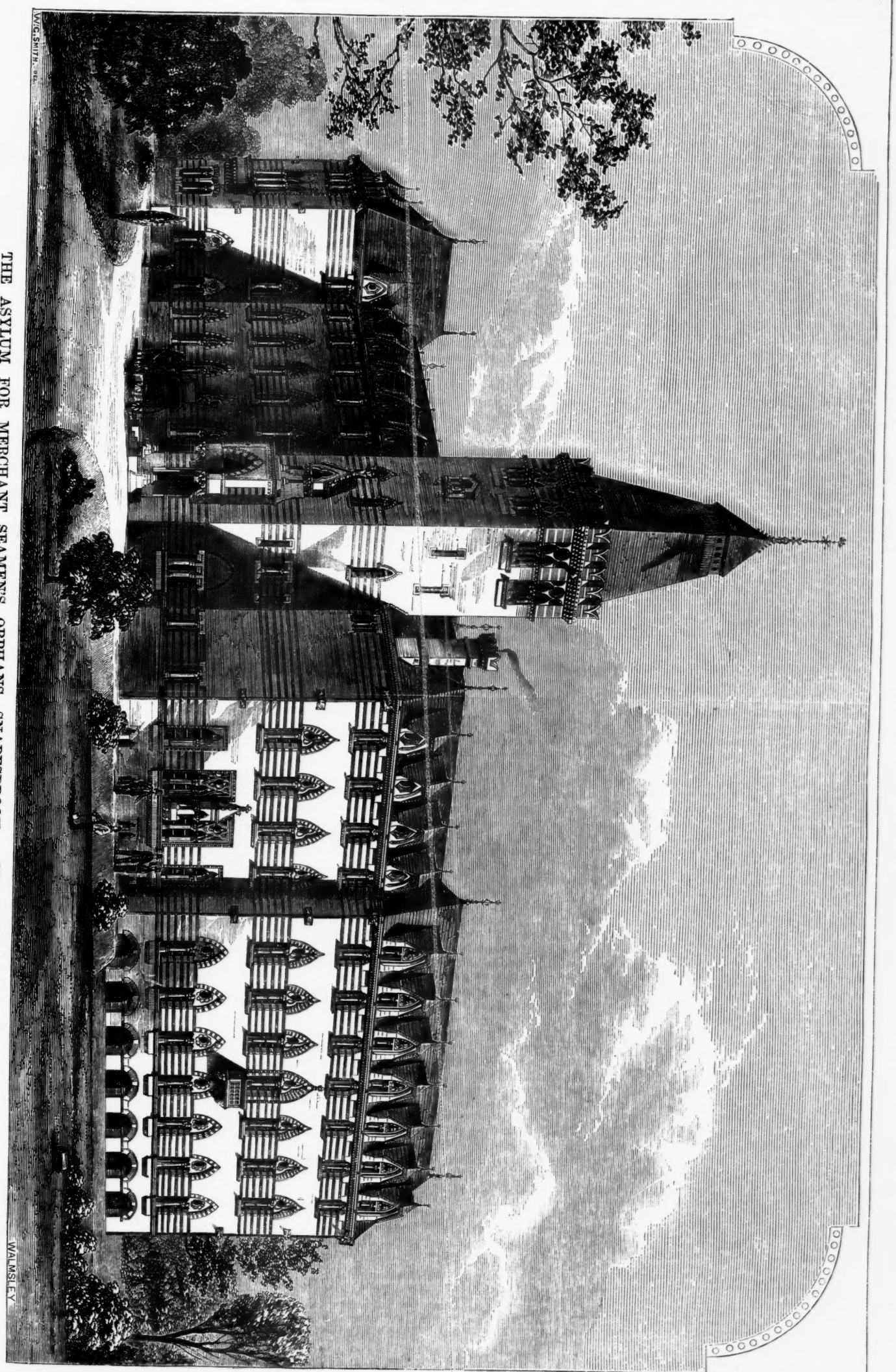
A detached chapel, built at the expense of Lady Morrison, is just on the point of completion for the sole use of the inmates of the asylum, and at a cost of between 3,000*l.* and 4,000*l.*

REFERENCES TO PLAN.

A. Hall.
B. Principal staircase.
C. Secretary's room.
D. Head master's room.
E. Boys' staircase.
F. Boys' class-room.
G. Under-master's room.
H. Officers' dining-room. Future class-room.
I. Mistress's room.
K. Visitors' room.
L. Girls' Staircase.
M. Girls' bonnet-room and lavatory.
N. Scullery.
O. Knife-room.
P. Larders.
Q. Coal-stores.
R. Stores.
S. China-stores.
T. Staircase to cellars.
V. Staircase to Washhouse.
W. Mending-room.
X. Engine-house.
Y. Carpenter's shop.
Z. Tradesmen's entrance.

## REIGATE LOAN EXHIBITION.

THE lovers of art, who are looking for a country excursion in the Easter week, will find much to interest them in an exhibition which is to be opened on Wednesday next, in the new Public Hall at Reigate. Pictures of the best masters, both old and of the present day,—rare china, enamels, some striking specimens of Wedgwood ware, bronzes, and various other objects, such as the public has been accustomed to see and to admire in our late Art Exhibition, will furnish material for a day's examination and enjoyment. Mrs. Hope, of Deepdene, Mrs. Forman, Mr. H. E. Gurney, Mr. John Lubbock, F.R.S., Mr. Leaf, Mr. Griffiths, Mr. Wilson Saunders, Mr. C. Davidson, Mr. Alfred Williams, Mr. Arthur Jaffray, the Rev. Jas. Beck, with other friends, both artist and amateur, have furnished important contributions to this collection; which has the additional merit of being placed in one of the prettiest and most accessible towns in Surrey.



THE ASYLUM FOR MERCHANT SEAMEN'S ORPHANS, SNARESBROOK.—MR. G. SOMERS CLARKE, ARCHITECT.

## ON GEOMETRICAL AND OTHER SYMBOLS.

THE beautiful geometrical symbol called the hexalpha, or interlacement of triangles,—

which lately appeared in the *Builder*, emblazoned on an engraved view of the Manchester Memorial of Prince Albert, has led me into a little hurried research as to the meanings attributed and attributable to this and other kindred symbols; and with your leave I would wish to record, in the *Builder*, a few of the more interesting results of these very limited researches; together with some ideas of my own on the probable original signification of such symbols.

So far as I have yet been able to discover, the materials for a disquisition of this kind are by no means abundant, although there is sufficient evidence that some of these symbols have been extensively and generally used, both in ancient and in modern times, and both amongst Eastern and Western nations, as well as amongst heathen and Christian communities. The original and true meanings embodied in them, therefore, form a subject of great interest and curiosity.

But here, at the outset, let me once for all remark, explanatively,—or, if you will, apologetically,—that, considering the close relationship in which all geometrical and other symbols used by the ancient Egyptians, Assyrians or Chaldeans, Greeks, and Hindus, or by the Buddhists, Druids, Zoroastrians, Hierophants, and all such magical religionists, must necessarily stand to magic and the oracles evoked during entrancement; we *cannot*, even in the *Builder*, altogether ignore these no doubt very wild and *outré* subjects in any serious and hopeful endeavour to get at the true and original meaning of their symbols: in fact, we must not only *know* something about both magic and the oracles, but must *say* something about them,—and cannot avoid doing so; far less about Freemasonry and Christian mysticism, with both of which such symbols have also much to do; and, as some of them are even used by architects themselves, as in the very case of the arch-masonic and arch-magical hexalpha which has initiated this inquiry;—mysticism, magic, and the oracles of entrancement, therefore,—with all of which, as can easily be shown, not only the hexalpha but many other geometrical symbols have been specially and peculiarly associated,—become, to this extent, at least, even a kind of professional subjects! In truth, entrancement, which is a definite though abnormal state, or series of states, of existence in the human body; and, as such, however mysterious for the present, still, quite capable of a sciential, if not of even a strictly physiological, and simple explanation, as I shall incidentally endeavour to show; will also, as I believe, be found to constitute the key to both magic and its symbols.

First of all I shall briefly, and without much additional comment, transcribe some of the notes I have taken from the several books into which I have dipped with the view of gleaning information; and afterwards I shall offer a few suggestions of my own on the subject.

Angles and triangles, single and variously connected, hold a distinguished place in religious symbolism. The cross itself is a duplex or even a quadrate congeries of angles; and, as we shall soon see, has been held sacred and significant in many forms of religion.

One of the simplest of angular symbols, however, was the ⋁, or ⋎, or bident, on the top of a symbolical staff, which is frequently held by female figures in the Egyptian sculptures, but which I have never seen in the hands of a male figure. The ⋁ or ⋎ of Egypt, therefore, has by some, and with seeming reason, been interpreted as a sexual symbol denotive of a feminine principle. Others, however, explain it differently; and indeed one notable result of my limited researches is that a like difference of interpretation exists in regard to many symbols; so that each interpretation must be taken *cum grano salis;* and we must look out for such of these or other interpretations as shall tend to less discordance and more harmony of meaning, if any such there were, in regard to kindred symbols, than is now very palpable amongst the various authorities consulted.

Dr. Oliver, a great authority among the Freemasons, says of the ⋎ symbol in his "History of Initiation" (p. 83, ed. 1841), while treating of what is called "the great triad of the Gentiles;" that "the mystical symbol ⋎ was also much esteemed from its allusion to the same triune God; the three distinct lines of which it is composed forming *one*, and the one is *three:* this was in effect the ineffable name of the Deity; the Tetractys of Pythagoras and the Tetragrammaton of the Jews."

The ⋎ or bident form may be seen among the ancient Egyptian sculptures, mounted thus on an equilateral triangle:— but I have not met with any feasible interpretation of its supposed meaning, although it appears to be occasionally used by the Freemasons. Perhaps a little light may be shed upon it by the affinity which it seems to bear to another Egyptian symbol, in respect to which Dr. Barlow (see the *Builder* of March 31, 1860, p. 196), says,—"Beneath the tree [of life, the phœnix palm] are two herons, feeding from equilateral triangles,—extremely symbolical: we may sometimes see similar symbols of birds feeding from the equilateral triangle on Christian monuments: there is one such in the church of St. Maria, in Trastevere: I took a sketch of it when last in Rome."* It is probable, therefore, that whatever be the true meaning of the bident implanted on the equilateral triangle, that meaning may be also involved in the bird form feeding out of the equilateral triangle. Now just as the bident staff is always seen in the hand of a female, and never of a male, on the Egyptian monuments; so we find that female forms are often crowned with a bird-shaped head-dress, but never male forms; and, as I pointed out in one of two articles on Bird Symbols in the *Builder* [15th January, 1859], the wives of the Hindu gods, which gods and goddesses, in not a few points only, resemble the Egyptian, are described in the Brahminical books as being "in the forms of birds."

Hovering over a couched and prostrate, male, and even phallic, form, however, in one of the Egyptian sculptures [see the great French work, "Description de L'Egypte,"—division,—Antiquités, tome I] there is a bird-form (sometimes the same symbol is human-faced) which has been mistakenly, as I think, interpreted to signify the *Soul quitting* the *dead* body; whereas its face is turned *towards* a *living* body (in one case a female, though in another a male), as if about to descend upon it; so that it is much more likely to denote the descent of the divine oracular *Spirit*, invoked by or upon "him who reposes on the beautiful couch."

And here I may parenthetically remark,—although without special reference to the bident, except by way of inversion, which, however, is itself instructive,—that male phallic forms, on the Egyptian sculptures, are almost always accompanied by the flagellum or ascetic scourge, bent thus ⋀, or reversing the ⋁ or feminine form, and into the angle of which ⋀ form one hand is almost always pointed.

That the bird-form accords with the ⋁ or ⋎ as a feminine symbol, notwithstanding what I have just said, however, of the male form with the bird hovering over it; and although another male form even appears with a bird-shape behind, covering him as if it were by a robe; appears from the fact that Isis herself is frequently sculptured, as well as described, as a guardian angel standing behind and covering or overshadowing and protecting her husband-brother Osiris with wings, as the Hindu bird-goddesses, "with unclipped wings," are said to be "the protectresses of mankind;"† and that the guardian angel, or ferocher, of the Egyptians, also appears as a winged sun, sometimes symmetrical or geometrical, sometimes more freely treated, as if it were intended for a bird; and indeed occasionally as a bird itself, with the disc or sun on its head.‡

There is thus far, on the whole, at least, some degree of probability in the idea that the bident did denote a feminine principle, whatever that principle may have been; and indeed the bident may have been meant also for the yoni itself, as representative of that unknown feminine principle, seeing that phallic ideas do so unequivocally crop out in the Egyptian sculptures, as we have just observed, no less than in the Indian. I shall ultimately show quite a different *reason*, however, for the ⋁ form of such a symbol.

The St. Andrew's Cross ✕ may be said to combine both the ⋁ or feminine form and the ⋀ or masculine form. It is also an ancient Egyptian symbol.* A large and conspicuous St. Andrew's Cross appears on the breast of a male and phallic figure engraved on plate 36th, fig. 5, of tome 3rd (Antiquités) in the French work "Description de l'Egypte." The figure is surmounted by the winged sun or Egyptian ferocher; and one hand, as usual, is raised into the angle of the agonistic scourge in its angular or ⋀ form; the whole seeming to indicate, as it were, that the *lower* part or ⋀ of the cross on the breast denotes the phallic or agonistic, masculine *soul*, or man, himself, while the upper part or ⋁ denotes his ecstatic, angelic, and oracular *spirit*, ferocher, pharaoh, fairy, peri, winged orb, or Light of the soul. Thus it appears, at all events, that the St. Andrew's Cross is not an exclusively Christian symbol. In tome i. of same series of volumes, plate 16th, there is also a figure on whose dress the St. Andrew's Cross appears.

The Tau (⊤), or, with a ring handle at the top, the Crux ansata, of ancient Egypt, is a duad of angles, and was used even by Christians, in early ages, as a form of the cross itself; as was the cross proper by the ancient Egyptians. The crux ansata is believed to have signified life, and especially the life to come, the life "in eternity," or the "eternal life;" and it has also been held to have denoted "the preserver."

From its occasional *reversal* on the sculptures; being sometimes, as in the Tombs, by the mystic Thmei, or Spirit of Truth, held by the stalk, though more generally by the ring, perhaps the ⊤ had one meaning and its reverse or ⊥ another; while the cross in what has been called its Greek form ┼ may, I think, have comprised both in one, as it were thus, ⊥/⊤, in which case the lower might denote the life that now is and the upper the life to come, or the lower the Soul-life and the upper the Spirit-life, as in the St. Andrew's Cross.

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* The equilateral triangle surrounded by rays, and surmounted by a dove, must be familiar to many of your readers, especially as a subject for stained glass windows in churches, and also on the title pages of Bibles. The Holy Spirit is here clearly indicated.

† "The gates of the realms beneath and *the guardianship of life*, are placed in the hands of the goddess; and the initiation into her mysteries is celebrated as bearing a close resemblance to a voluntary death [by entrancement] with a precarious chance of recovery.....whom, through her providence, being after a manner born again [into life, a child, as it were, of the *guardian* goddess, after this "voluntary death"], she restores to the career of a new existence."—*Apuleius.*

‡ That the winged disc, which is so frequent and prominent a symbol in Egyptian temples, not only represents a winged *sun*, but the ferocher [pharaoh?], fairy, peri, or guardian angel, and protector or saviour, and Egyptian equivalent for "the *sun* of righteousness, with healing in his *wings*," appears to be corroborated by the peculiarities of the Persian and Assyrian ferochers: thus these latter hover over the protected, sometimes fighting his battles as it were, or shooting arrows at those whom the protected is shooting at, and otherwise simulating his actions; sometimes assuming the attitude of blessing the protected, as in one case of a Persian ferocher, that of Darius, represented in Rawlinson's Herodotus, vol. iv. p. 4, as a cruciform and feathered figure, and in which the protector and the protected evidently stand in a precisely similar relation to each other with that in which a sun with rays, also represented, stands to the sacrifice on an altar before the protected, and on which the solar light is beaming. The Egyptian ferocher itself, too, in the form of a bird on the wing, and sometimes with a solar disc on its head, may be seen accompanying warriors with weapons, just as the ferocher of Assyria does;—plate 51, vol. i. (Antiquités) of Description de l'Egypte, for example. In some instances, at least, the sun-crowned bird seems clearly to be an owl, such as Hazelquist describes the supposed hawk to be which is so frequent on the Egyptian monuments; in which cases the sun-crowned bird is clearly identifiable with the goddess Isis, who, like Ceres, her Eleusinian equivalent, was the "midnight sun" as well as the ever suddenly-born, yet at once mature and full-grown, Minerva, or goddess of wisdom, and oracular counsellor, of the "Noctis Societas," or initiated, whose mysteries were always performed by night. Doubtless the human figures with a sun-head, or "lucid round," in the centre of one of which is a "single eye" (plates 63 and 79, vol. i.), were also denotive of this nocturnal Irradiater, who turns darkness into light—night into a peculiar and internal day—the translucid day of rest in the bliss or ecstacy of entrancement, during which, to those "brought to Light," as the Freemasons say, *external darkness is no hinderance to perception*, and the initiated are "in the Light," for "there is no night *there*, and they need no candle, neither light of the sun;" their "eye" being "single" and their "whole body" being "luciform" or a "glorious body," "full of Light, as when the bright shining of a candle giveth thee light." Such is the clear vision of the highly entranced; and blindfolding, as a test of the possession of such a faculty of the oracular Spirit, was well known and practised in ancient times, and among the Jews as well as among the Gentiles: hence the Jews even attempted, mockingly, to test our Saviour in this way: "they blindfolded him, and smote him on the face; and asked him, saying, Prophecy! Who smote thee?"

* There was a singular propriety, as well as expressiveness, in the affixment of the hexalpha, or interlacement of triangles, on a monument to the Prince Consort; inasmuch as the compound initial-symbol often used during his life,—an Ⱥ interlacing with a ⋁,—was almost the hexalpha itself; and the feminine, too, here happened, curiously enough, to be the ⋁, and the masculine the Ⱥ. I am almost persuaded it was a special inspiration of what we may call symbolic wit, rather than a mere happy coincidence, which led the architect of the Manchester monument to use the right royal and distinguished hexalpha in this instance.

Dr. Barlow (see *Builder* of 24th March, 1860), while speaking of the Indian, Greek, and other uses of this symbol, says;—"The ⊤ square [Indian] symbol, with a handle attached to it, became the Crux-ansata, the symbol of eternal life among the Egyptians. The lingam-yoni symbol of life [⊥] *reversed*, becomes the famous Tau or Cross [⊤], which was the symbol of life among the Greeks. . . . . We often see this symbol on Etruscan ornamental borders: there are several such in the Museum of the Vatican, occurring as the Tau and as the lingam-yoni,—that is, *alternately* upright and reversed."

By turning up Rawlinson's "Herodotus," vol. iv. p. 58, it may be seen that there are Egyptian sculptures which show that the Greek Cross, as it is called, as well as the St. Andrew's, was frequently used, both amongst Asiatics and Africans, in the time of the ancient Egyptians. Sometimes it was worn as a necklace, just as it still is among Christian nations; sometimes like a star, or order, on the breast; sometimes in a series, or alternating with a circle, in ornamenting dresses. Among the Scythian warriors, dresses were thus ornamented; just as the Thibetan Grand Lama's dress, according to Huc's "Thibet," is bordered with crosses to this day. "The Vaishnavas of India," says Higgins, in his Anacalypsis, vol. i. p. 223, "have a sacred jar which they mark with crosses, and with triangles thus ✡. The vestment of the priests of Horus is covered with these crosses. This is the same as the dress of the Lama of Thibet. These are the sectarian marks of the Jains." He also notes (p. 519) that "on the ruins of Mundore may be seen various mystic emblems, as the quatre-feuille, the cross, the mystic triangle, triangle within a triangle, &c."

The Greek cross was used as a staff symbol in ancient Egypt: see plate 9, from the Bembine Table, in "Warburton's Divine Legation of Moses;" vol. ii. p. 235; which contains a mummy dressed figure, with what has been called the staff of power, having a cross proper (not the mere Tau), surmounted by the head of a dove, which, in Egypt, as among Christians, appears to have been indicative of the divine, oracular Spirit, so that Egyptian priestesses, in whom the oracle was invoked, were called doves, as those filled with the Spirit among ancient Christians also were.

The cross, indeed, as Maurice, in his "Indian Antiquities," vol. ii. p. 350, remarks, "was one of the most usual symbols among the hieroglyphics of Egypt and India." In Montfaucon [Ant. Exp., vol. ii. pl.. 49], may be seen several medals of Anubis, or Noubis, where he is called X and T, probably also mystically indicative of the St. Andrew's Cross and the Crux-ansata. It is remarkable, too, that the Tartars call the St. Andrew's Cross, or at least the Freemasonic ⨉, *lama*, from the Scythian *lamh* a hand; and thus it became the name of their high priest,—perhaps, I may suggest, from his laying on of hands in blessing. Higgins, in speaking of this, says:—"In Irish, Luam signifies the head of the Church. It is singular that the name of Lama, in the language of Tartary, thus signifies the cross; and the Bogdoi, who conquered China in 1644, always called the cross Lama. The X, or ten, was said to refer to the ten fingers of the two hands, as a perfect number."

Higgins, from his propensity to twist everything to the disadvantage of Christianity, and to the advantage of his own often erroneous theoretical ideas, is not much to be trusted, to be sure, on such a subject; but he only contributes, in this case, a little towards evidence which unquestionably proves, quite independently of him, that the cross has been an almost universal symbol, which is found recorded even in the far West, on the temple sculptures of ancient America, no less than on those of ancient India in the far East, as well as on those of ancient Egypt, between these two extreme and opposite hemispheres of the world. We may, therefore, I dare say, safely enough make use of the immense research displayed in the Anacalypsis here a little farther on this subject.

Figure 14, in Higgins's plates, is a representation of Indra crucified; his hands and feet nailed to the cross, as in Christian crucifixes; but the body, legs, and arms, are covered with, or made up of, leaves; the whole looking like a head, hands, and feet, stuck on to a leafy cruciform body, and nailed to a cross. Such crosses, he says, are to be seen in Nepaul, especially at the corners of roads and on eminences. Indra is said to have been crucified by the keepers of the Hindu Garden of Paradise for robbing it (of a flower, was it not?). The cross is put up in Thibet to point the way; and Lamas, I may here observe, are, as it were, crosses, pointing the way to salvation, according to Buddhist principles,—that is, the way to Nirvana, which is believed by the Buddhists to be the grand fountain head of all salvation; and, in fact, equivalent to the attainment of bliss, by "crucifying" the flesh, or becoming "dead in the flesh but quickened by the Spirit."* "The cross," says Higgins, "denoted, among the Egyptians, Druids, and others, eternal life: it was also the form of the phallus, and hence the sign of the procreative power, in renovation or reiterated succession of life: hence the cross came to be regarded as significant of eternally renovating life." There is, doubtless, *some* truth here; but this passage affords merely a gross and fallacious idea of that "eternal life" of the second birth, or regeneration, whether according to Hierophants or according to Christians, with which, as I shall afterwards endeavour to show, the cross and various other geometrical symbols are most significantly connected in meaning, and even in form.

So deeply impressed with the symbolical meaning of the cross do the ancient Indians appear to have been, that some of their temples are said to be built on a cruciform plan, just as Christian churches are.

There is one way by which it might be said that the cross, as a symbol, may be supposed to have originated in India, although I shall hereafter show quite a different reason for it. The devotees of Siva, the "destroyer," as he has mystically been called, marked their foreheads with a horizontal bar or line, while the devotees of Vishnu, the "preserver," marked theirs with a perpendicular line; and there were devotees of both Siva and Vishnu, whose mark was one, therefore, composed of both lines; thus completing the cross, either as the tau, ⊤ or in what is called its Greek form, ✝ as a mark upon their foreheads. It is very questionable, however, whether such an origin would account for the mysterious and extraordinary prevalence of the cross, as a symbol, throughout the whole world.

Reference to the tau or the cross as a mark on the forehead reminds me of "Ezekiel's "visions of God," in which he saw "what the ancients of the house of Israel do in the dark, every man in the chambers of his imagery," and "every man his censer in his hand, and a thick cloud of incense went up;" together with other heathen "abominations," such as the Israelites "worshipping" the outward "sun towards the east," and the "women weeping for Tammuz." Then "the Glory of the God of Israel was gone up from the cherub, whereupon he was, to the threshold of the house; and He called to the man clothed with linen, which had the writer's inkhorn by his side; and the Lord ("the Glory of the God of Israel') said unto him, Go through the midst of the city, through the midst of Jerusalem, and set *a mark* (a tau) upon the foreheads of the men that sigh and cry for all the abominations that be done in the midst thereof." These were to be *preserved* in *life*, while all the others were to be smitten and slain. This "mark," as Wilkinson and others remark, was the Egyptian cross. The tau is also believed to have been the mark which the children of Israel, then in Egypt, made upon the door-posts of their houses, by command of Moses, who was "learned in all the wisdom of the Egyptians;" that, in the destruction of the first-born of Egypt, the Angel of Death might see it and pass over them.

The notion of many Christians that the cross, and various other Christian symbols, emblematical associations, and observances, common to Buddhists, Brahmins, and Christians, must have been all borrowed from the Christians, is quite untenable. It reminds one of the acute Yankee of the far West, who had the notion that an Englishman whom he happened to meet must have borrowed his extraordinary knowledge of "the American language" from the Americans. Those who imagine that the Thibetan, Chinese, and Indian crosses, in particular, were derived from Christian sources, are quite as far astray as the Yankee; these being evidently native Buddhist and Brahminical symbols; and far more ancient, probably,—as the Egyptian and American crosses must also be,—than Christianity itself. The Jews were already in the habit of crucifying malefactors on a cross when our Saviour lived; so that even among the Jews the cross was at least then a sort of grim symbol of a sacrifice; and no doubt the Chinese also crucified malefactors then, as they still do.

In the region of ancient Chaldea,—whence emigrated Abram the Chaldean "father" of the Jews,—Semiramis, the mystical queen of Babylonia, or more properly, perhaps, the oracular Spirit, or ferocher, fairy, peri, or guardian angel, and counsellor, of the king, was threatened with crucifixion;—a mystical threat which is explicable in connexion with the fact that the Assyrian and Persian ferocher itself was occasionally cruciform, or appears on a wheeled cross, watching over the king.

Here I may remark, by the way, as to Semiramis, that, on the idea that the king had, in his own person, no oracular power, or susceptibility of entrancement, she may be regarded either as the chosen priestess, in whom the God, Baal, "appeared" or was "invoked;" or who was "visited" by the God; every night, on the elegant oracular or state bedstead, or couch, which Herodotus tells us stood, for that purpose, in the sanctum of the temple of Belus or Baal, at the top of the tower, at Babylon; or, she may have been that oracular Spirit, or ferocher itself, in the chosen priestess. We cannot here wait to fully consider the curious and heretofore confused and inexplicable historical facts as to Semiramis, sufficiently to work out the problem now started; but it is quite explicable, I am convinced, on these ideas; *e.g.*, the difficulties as to whether she were a contemporary with, or a successor to, the king, with whom, and as if his double or counterpart, she is seemingly so inextricably mixed up. I may remark, however, that there is collateral evidence of the probability that the king had, in his own person, the ferocher, pharaoh, or oracular and protective Spirit. Thus Rawlinson sees reason to maintain that Nimrod, Zoroaster, and Orion, were one and the same; that Zoroaster was a Chaldean; that both Nimrod and Zoroaster were said to have invented magic and astrology; that the Arabic astronomy calls Orion el Jabbar—the Giant—the special epithet of Nimrod, and that Gibbur is the particular Hebrew title given to the Nimrod of Scripture; that mounds of ashes in Babylonia are called Nimrod, fire-worship having been instituted by Zoroaster or Nimrod; that there were Babylonian scyths, called "Namri;" that *Orion* being *invoked Zoroaster* was *consumed* with fire and *apotheosized*; and that Nimrod was himself *worshipped as Orion* by the Semites;—from all of which premisses, I should feel inclined to conclude that kings such as Nimrod were indeed, to a certain extent, or occasionally, supposed to be twofold, since they possessed, or could, as was believed, invoke, the ferocher, god, guardian angel, or divine oracular afflatus within them; so that while Orion, or "the God," was invoked in Zoroaster or Nimrod, the body of the king was of course God-possessed, or apotheosized, and the man Zoroaster no longer for the time existed: he was "consumed by (this inward solar) fire" of Baal, the god of fire, as a mystical sacrifice on the *internal* altar of this microcosmic "sun," or winged and celestial ferocher, and guardian spirit of magical entrancement.*

In truth, entrancement, and the quickening Spirit, which is *awakened* in high entrancement, and is the natural as well as the supernatural or ultra-natural "Light" of the soul, as I shall afterwards endeavour, briefly and scientially, to show, will be found to afford us the psychological and the only key to vast regions of mystery and magic, as well as symbolism, in ancient mythology. The life of all human beings,—as the two *alternating* states of waking and sleep, in themselves, though imper-

* I have already (see on Bird and Wing Symbols, in *Builder* of 15th January, 1859), shown the error of regarding Nirvana as a state of total and irredeemable destruction or annihilation.

* If Zoroaster "or any other man" really ever "became a god," and was then and thus "no longer man," as Iamblichus has it, it might become a very natural question what had become of his nature as a *man*; and the mystical reply to this would be that it was "consumed" like a sacrifice by altar fire,—like cold by heat—like the electro-positive by the electro-negative—in and by the God in possession, who is "a consuming fire," but still a redeeming and a saving one; so that though losing his own human life *while* "the God" possessed his body, the man would "find it again" so soon as the divine afflatus or Spirit or God passed off. The ancients had very different ideas of "a God" from what the moderns have: thus Plato calls wine an evil god, and water a more sober god; and we know that when even the apostles were filled with the truly divine Spirit, they had the outward appearance of men "filled with new wine:" hence, too, there is a singular and frequent antithesis in the Bible between being 'filled with the Spirit" and "filled with new wine:" thus, "be not drunk with wine wherein is excess, *but* be ye filled with the Spirit:" John the Baptist "neither drank wine nor strong drink, *but* he was filled with the Holy Ghost: Eli the priest having charged Hannah the prophetess with being drunken, she said "I have neither drunk wine nor strong drink, *but* have *poured out my soul* before the Lord,"—who "is that Spirit."

fectly, imply,—is potentially, or by constitutional possibility, twofold,—human and divine, or soul and spirit,—as Plato and many others of the ancients tell us; and as the doctrines of the Druids, the Brahmins, the Buddhists, the Egyptian hierophants, and indeed all other ancient religionists, indicate,—a fact which I have already endeavoured to show forth in the articles on "Bird and Wing Symbols" in the *Builder* of 16th October, 1858, and 15th January, 1859. The ordinary waking life of the human soul and body, and the waking life of the divine Spirit of entrancement,—during which the body is dead to the waking soul-life of the flesh, or *human* nature, as any corpse in its coffin,—far more dead to all sense and all pain, therefore, in this "voluntary death" than it is in that depraved similitude of, and imperfect substitute for, entrancement, or ecstacy, called sleep,—are two antitheses yet images of each other, or as it were sexual counterparts, just as the positive and the negative electrical states of a body are two antithetical or reversed states of the one body, with the neutral state comparable to the neutral state of sleep, as it were between them.* The awakened or "invoked" Spirit of entrancement, or ecstacy, therefore, though the counterpart, is the complete "reversal" of the ordinary waking life, and its only full and perfect "rest;" and, to "this life" of ordinary waking, it may be said to be not only sleep but *more than* sleep, or *beyond* sleep,—a deeper "repose" than the alternative and shadowy state of sleep; beyond whose fantastic dream veil it lies normally dormant: hence, however, the strange association of the magical and oracular waking Spirit of entrancement with dreams, visions, and other phenomena in which the ancient magicians, whether Chaldean, Egyptian, or Indian, ever dealt; and without a philosophical or sciential understanding of which Spirit their magical and mystical symbols cannot be explained.

The cross, in its various forms, whether Greek, Egyptian, St. Andrew's, or Maltese, is not the only form in which angles have been symbolically combined; as, indeed, the hexalpha itself, at the outset, indicated.

By far the most extensive and curious collection of angular and other geometrical symbols ever brought under notice probably, or at least that I have ever seen, are described, with diagramatic illustrations, in the "Archæologia," vol. 30, in two letters "On certain Marks discoverable on the Stones of various Buildings erected in the Middle Ages." The letters are signed "George Godwin, jun.," and were addressed, in 1843, to Sir Henry Ellis, F.R.S., the secretary, at that time, to the Society of Antiquaries. In these letters, the attention of antiquaries and archæologists appears to have been, for the first time, drawn to the general and interesting subject of masons' marks, and their connexion with the craft and mystery of Freemasonry. At the close of an article such as this, however, I cannot do justice to the importance of these and other associate symbols; and must reserve them, therefore, to the opening of another communication; which I hope I shall have your permission to lay before your readers.

JOHN E. DOVE.

* "In a paradisical state, according to the primitive Fathers, *Sleep* was *voluntary* and holy: it was a mystical and *Spiritual* Repose, before God, in which the *Soul*, elevated by contemplation, entered into and *exercised the noblest functions* of its *Angelical* part [of its higher or upper part]: Sleep was not then, as now, a mere interval of frenzy, or as in some a total insensibility."—"The Philosophical Principles of Natural and Revealed Religion" (vol. I., page 372); by Chevalier Ramsay, a French Freemason, of Scottish extraction. This, in short, just means that at one time the death-like sleep of entrancement, in which Angelical functions were exercised, as in a corpse-like yet waking life, was substituted voluntarily and *nightly*, or *in the time and place of sleep*, as a more thorough and refreshing or restorative rest; and that this Angelic or Spiritual and blissful state of rest to Soul and body, thus nightly enjoyed, turned night and its "outer darkness" into the inward "Light" of a new and peculiar day,—the waking day of rest, "dead in the flesh, but quickened by the Spirit,"—a state which was in itself, in fact, the paradisical or Elysian state of beatitude, or "the ecstatic state," or state of "divine bliss," which mankind once enjoyed, as they still can, and will yet again do, *alternately with the waking life* of Soul and body. I need scarcely point to the light which this view sheds upon the "voluntary death" of the Eleusinian and other *nocturnal* mysteries, and upon the Coffin used in Freemasonic initiations into "the Light" of the "high noon" of *night*. This, says the quasi Hermes Trismegistus, in allusion to the ecstatic state of entrancement, as the "sober watchfulness of the mind, *in the sleep of the body*," and "the true sight," and "light" of him who has "*gone out of himself*, like them that dream in sleep,"—"this is the mystery that to this day is hidden and kept secret,—*life* the *Soul*, and *Light* the *Mind*,—My Mind,—*that is*, Pimander, the great Lord of the Word, whereby I am inspired,"—in fact, "the *Spirit*" which "brings all things to remembrance"—to *Mind*—in the *Soul*.

## THE STRENGTH OF WROUGHT-IRON GIRDERS.

PERMIT me to direct attention to the results of the formulæ for computing the strength of wrought-iron girders, as given in the *Builder*, vol. xi., pp. 646 and 677, compared with the formula obtained from Fairbairn's work on cast and wrought iron.

The formula first alluded to for a girder of I form, with four angle irons, is thus stated:—

$$W = \frac{4f \times (CN)^2 \times (2t \times AB + \frac{2}{3}s \times CN + 4a)}{l},$$

where W = safe weight in tons applied in centre.
$f$ = force exerted by the particles in a square inch of section, at the distance of 1 inch from the neutral line.
CN = the distance of neutral line from the the top of the beam; in this case taken at the centre of the depth, the flanges being equal, and the resistance to compression and extension considered equal.
$t$ = thickness of the top flange.
AB = width of ditto.
$s$ = thickness of vertical web.
$a$ = area of section of one angle iron.
$l$ = length between supports.

All the dimensions are taken in inches. The value of $f$ is found from the equation $f \times CN = 8$ tons, which is constant. Substituting this value of $f$, the equation becomes,—

$$W = \frac{32 \times CN \times (2t \times AB + \frac{2}{3}s \times CN + 4a)}{l}$$

and taking the first example as given at p. 677, vol. xi., where CN = 6 inches, AB = 5 inches, $l$ = 120 inches, $s = \frac{1}{2}$ inch, $t = \frac{1}{2}$ inch, and $a$ = 1 square inch, $W = \frac{32 \times 6 \times (5 + 2 + 4)}{120} = 17.6$ tons, = safe weight applied in centre.

On referring to Fairbairn's treatise on cast and wrought iron, at p. 77, I find his formula stated thus: — $W = \frac{adc}{l}$, when W = breaking weight in tons, $a$ = area of bottom flange, $d$ = depth of beam, $l$ = distance between supports, $c$ = constant, whose value is taken at 75, all the dimensions being in inches.

Using the same example again we have:— $a = 4{\cdot}5$ in., $d = 12$ in., $l = 120$ in., $c = 75$.

Whence $W = \frac{4{\cdot}5 \times 12 \times 75}{120} = 33{\cdot}75$ tons; and taking the safe weight at one-fourth, we have $\frac{33{\cdot}75}{4} = 8{\cdot}44$ tons nearly, a result nearly one-half of that obtained by the first rule.

This discrepancy between the results is so marked as to require further investigation. It will be observed that the former gives 17·6 tons as the "safe weight" applied to the centre of the girder, but it is not stated what proportion of the breaking weight that is supposed to be.

On referring to the Report of the Commissioners on the Application of Iron to Railway Structures, whence the first formula is deduced, it would appear by observations made by Mr. Hodgkinson at p. 171, that, although in computing the strength of the proposed tubular bridge across the river at Conway, he considered that it might be loaded so that the metal in the top of the tube would be subjected to a compressive strain of 8 tons per square inch (that is, $f \times CN = 8$ tons); yet, he says that, "the load above seems to be the greatest that the tube ought to be made to bear." And on p. 121, of the same Report, in treating of the weakness of wrought-iron to sustain compression, he states that, if the force of compression be greater than 8 or 9 tons per inch, "a considerable change takes place in the nature of the material, and beyond about 12 or 13 tons per inch of section, the metal, in most cases, cannot be usefully employed." Hence the assumption that $f \times CN = 8$ tons employed as a constant for computing the strength of beams will give the "safe weight," is manifestly erroneous.

The liability of plate beams to lateral flexure must not be lost sight of in considering their ultimate resistance to a transverse strain; also the danger of buckling of the plates forming the upper flange, if made of too thin material; and the loss of tensile strength consequent on the use of riveted plates. Much information on these and other points may be obtained from the Report before alluded to.

With regard to loss of strength by lateral flexure, it may be useful to point to the results obtained from some experiments given in Fairbairn's work at p. 102, where three rolled-iron beams are described as being severally loaded until they gave way, in each case, by lateral bending. Applying his formula $W = \frac{adc}{l}$ to the results, we get $c = \frac{Wl}{ad}$; and this gives, in the first case, $c = 52$; in the second, $c = 57$; and in the third, $c = 73$. Again, at p. 105, a plate beam is described whose strength computed by the formula $W = \frac{75ad}{l}$ should have been equal to 29 tons, but which being loaded with 14½ tons, when further loaded gave way to lateral flexure. Assuming that it gave way with 15 tons, and computing the value of $c$ as before, we get $c = 38{\cdot}5$. In none of these cases does the value of $c$ reach Fairbairn's standard of $c = 75$, whence the vital importance of guarding against lateral flexure is sufficiently apparent.

E. S.

## THE GREAT INCREASE OF SMALL-POX IN THE METROPOLIS.

SINCE the preventive means suggested by Dr. Jenner have been introduced there has been a marked decrease in the number of cases and in the amount of deaths resulting from this loathsome and fatal disease; and this difference is the more clearly to be seen in proportion to the extent to which vaccination is carried out. Although these facts are so plainly shown, we have noticed with regret that, amongst a large number of the working and poorer classes, especially the women, there is a great deal of doubt as to the efficacy of vaccination, and a fear that the practice leads to the introduction of various other diseases. We will not, however, go particularly into this matter, but would say that it is of great consequence that every means should be taken to distribute such information amongst these people as will be necessary to induce them to protect their children from the ravages of this disease. Besides this, sanitary precautions are also needful; for we find that the small-pox, like certain other disorders, is materially affected by cleanliness, drainage, and ventilation. In Bemerton-street, Islington, the small-pox has been, and still is, very prevalent; and our readers know how many of the houses in this street are situate;—let into various tenements, thirty and even forty men, women, and children, in some instances, occupying a single house, which is in no way fitted for such a purpose. Neglect of ventilation, with dirty rooms and bed and other linen, are all causes for the introduction and spread of this dangerous sickness.

In a house in Little William-street, in the same neighbourhood, the inmates have been attacked by small-pox. On asking a person living there what sort of house it was, we were told that "it was a nice pleasant house, with a *cowshed at the back*." In this instance only three families occupied the dwelling; but, on making inquiry, we found that complaints had for some time been made of unpleasant smells, and the inmates thought that the house was not wholesome. There is no doubt that this cowshed, in which four cows are kept, is not only a means of poisoning this house, but also those in the neighbourhood. In this and in some other instances we fear that the necessary and useful precautions in connexion with these unwholesome places are not carried out with sufficient care or strictness. Near Argyle-square, King's-cross, there is a very large cowyard, which is inclosed on two sides by houses thickly inhabited by poor families. There is a narrow passage here, in which at times the smell from the cowyard is shocking. Is sufficient care taken in the inspection of this and other similar places by the officers of health? The keeping of pigs adds much to this evil, and is a practice which should not be allowed in populous neighbourhoods.

When recently in the Finsbury district, we heard of cases of small-pox happening in some of these cellar-dwellings, which are there still, in defiance of the law, inhabited; and in order to prevent this and other bad consequences, these places should be inspected by those who have the charge of the public health, and families be prevented from occupying dens in which there is neither light nor air,—places in which small-pox, fevers, and such like disorders are generated.

In the case of the poor, at a time when this contagious disease is prevalent in various localities, it is very necessary that the parish authorities should afford every facility to those in their district for carrying the sick (not in street cabs) either to the proper wards in their own infirmary, or to the general hospital. Unfortunately the latter place is filled with patients; but means should be taken to get those afflicted from their

unwholesome homes, and so give them a chance of life, and prevent the further spread of the complaint. It is also of much consequence that the bodies of those who die should be removed as soon as possible; and this might be done more frequently than is now the case if the relieving officers of parishes were to afford greater facilities, and, when necessary, promptly afford assistance.

## TWO LONDON RELICS.

THERE are few if any of the antiquities that are particularly associated with the metropolis of this country which are so generally known by name as *London Stone*, and the stone which rests below the seat of the chair in which so many of the English kings and queens have been crowned; and yet there are few objects of antiquity the early history of which is so uncertain. So far as we know, no inscriptions or marks are to be found on either of these remarkable stones which would give evidence of their original purpose; yet there is a traditionary interest attached to both those relics which is only to be attributed to very ancient importance. Anything more singular than the legendary history of the coronation stone could not be well conceived,—that it was a famed and "prophetic," or "fatal stone," which tradition has termed the same whereon Jacob reposed his head when he saw the vision of the ladder and the angels of God ascending and descending. It would be well to sift the history of these stones, and determine where the traditionary matter ends, and where substantial history begins; but even the latter, in connexion with these venerable antiquities, is sufficient to make them of national importance. An accidental glance a few days ago at the coronation chair, an object which has been long familiar to us, showed us signs of decay in the ornamentation with which it was once richly covered; and it would seem desirable that means should be adopted to protect it from atmospheric influence. The coronation chair for the queens consort, which is put in close contrast with the ancient chair, is a work of ugliness corresponding with the taste of the times in which it was made.

## SOMETHING OF ART.

AT the Bristol School of Art, last week, Mr. Hammersley delivered one of the two final lectures of his course. He said he had protested in the previous lecture against art being taught upon a system which meant simply to amuse people, for amateurs should understand art rightly to have the full, true, and thorough pleasure which it was calculated to impart. He had shown them that amateurs were bound to study art also as a domestic question. That question was one particularly affecting ladies; because, in the act of spending money, they committed one of two things—either the perpetuation of that which was beautiful or that which was sad and deformed. On the subject of "The School: how does it accomplish its purpose?" he had spoken chiefly on elementary art. He began by repudiating picture-making, it being too frequently the case that amateurs wanted to do great things before they had accomplished small ones. It had always appeared to him that making a drawing of any given object went for nought unless the literature which lay at the base of it was perfectly understood. In drawing landscapes, for instance, what a number of questions there were lying at the threshold of the subject, without which drawing landscapes was perfectly nonsensical. With reference to his lecture on "Schools of Painting or Engraving," he said there was an immense amount of real mobility in all schools of art. It was a matter of small consequence to him whether he was criticising "The Last Judgment" of Michelangelo, or a cabbage painted by a Dutchman. Both in their way, according to the stand-point of the men who produced them, should receive their fair meed of critical examination, honest judgment, and approval. If a man was a sham, and painted an untruth, condemn it, however much it might amuse; but they must be sure that they knew they were considering what possessed pestiferous qualities. The pupils were beginning to find that there was reason for everything; and they did not see any reason why they should not reason with him on the subjects. Just imagine what that must end in: just imagine what three or four years' questionings of him, and questionings of books, with all the theories and principles and practice which they might have, would result in. The result would be that the institution, instead of being, as it was some time ago, a mere drawing school, would be an institution the pupils of which would know that there were relations between the thing put before them and nature. He was pleased to find that a great number of the young men who came in the evening—decorative painters, glass stainers, workers in stone, architects, &c.,—were consulting such authorities as were accessible to them there, and were trying to ascertain principles. Speaking of the desire amongst ladies for sketching from nature, he said that nothing could be more wholesome or rational than that wish; and as a furtherance of it a great deal of landscape had been practised in the morning classes; and he now pointed out to them what was necessary to enable them to excel in that department. He urged upon them the superiority of landscape drawing as a pastime to ornamental needlework.

## A WORKING MEN'S CLUB IN SOHO.

AN article on the Working Men's Club and Institute Union, which appeared in the *Builder* of December 27th, was read by several working men employed in the building trades, and residing in the neighbourhood of Soho-square; and they being convinced that a Working Men's Club was one of their chief wants, put themselves in communication with the Rev. H. Solly, the secretary of the society. After considerable correspondence and several interviews had passed, the council of the Union invited some of the men to meet several members of their own body; and accordingly a meeting was held at the offices of the Society, 150, Strand, on the 17th ult., Mr. Russell Scott presiding on the occasion. Details were thoroughly gone into, and information was duly noted down of the premises in Soho which could be obtained for club purposes. At the close of the meeting, which was of a deeply-interesting character, Mr. Scott engaged to provide a house, rent free for the first year, and arrangements have since been made to carry the promise into effect. The proposal to start a club has been largely canvassed among the working men of the locality, and a very large body of them have undertaken to become members. A printed form, mentioning the leading features of the Club, is being circulated, to obtain the names of persons who have not yet given in their adhesion to the scheme. The club-house is in Crown-street, Soho-square, and is being cleaned and repaired by the working men who originally proposed the effort. The materials for forms, tables, chairs, &c., will be purchased, and willing hands are ready to make the requisite articles of furniture. For bagatelle, dominoes, draughts, chess, skittles, and a number of other very necessary things, about 30*l.* will be wanted; but it is hoped that this sum will be subscribed by the employers of labour and the well-to-do residents in the locality. The heartiness with which these working men have set to work is equalled only by the spirit shown by the people of Scarborough, where quite recently a club was opened, the rich contributing money, the tradespeople wood, nails, screws, and supplying goods at cost price, besides providing refreshments for the workmen, who gave their labour in fitting up such premises as probably no other than the Scarborough Club can yet boast of possessing.

## THE PLASTERERS' COMPANY.

IN the year 1501 King Kenry VII., by his charter, dated March 10, incorporated the Worshipful Company of Plasterers, under the title of "The Master and Wardens of the Guild or Fraternity of the Blessed Mary of Plasterers, London." Their grant of arms by Thomas Hawley, Clarencieux, is dated January 15, 1546, while a confirmation of their charter of incorporation is dated June 11, 1667, which grants them the usual privileges of a guild, a livery, a master, two wardens, and thirty-two assistants. "Let brotherly love continue," is their motto, and the registered number of privileged voters is thirty-two. Their book of ordinances is an interesting volume. The *City Press* gives the following particulars of the company. In 1586 occurred one of those 'prentice riots so famous in the old time, and five of these rebels being taken they proved to be of the Company of Plasterers. By an Act of Common Council passed in the sixth year of William and Mary, 1694, it was ordered that, "Whereas the master and Wardens of the guild or fraternity of the Blessed Mary of Plasterers, London, are, and very anciently have been, a brotherhood or guild, and for conformation or strengthening of their privileges have obtained several royal grants, whereby and by their original constitution the said fraternity or guild ought to be and consist of all persons using the trade of a plasterer within the city of London and liberties thereof,"—a fine being inflicted on those practising the art without being a member. At present the guild stands the forty-sixth on the City list.

A statute was passed in the first year of the reign of James I., 1603, c. 20, which enacted that no plasterer should exercise the "art" of a painter in the City or suburbs of London; but an apprentice was exempt from the meaning of the Act. The penalty was 5*l.*, but a proviso allowed the plasterer to use whiting, blacking, and red ochre mixed with size, without oil. This was a very important statute, for it at once cleared up the several disagreements existing in 1575, between the plasterers and the painters, the latter retaining their privileges by becoming incorporated in 1581.

Plasterers' Hall is situate a few doors westward of Philip-lane, in Addle-street, Wood-street, Cheapside, and is now occupied as a warehouse. Malcolm, who wrote in 1803, tells us that the "rooms were much ornamented with work peculiar to their profession, and the best artists belonging to it were doubtlessly employed; but the company having thought proper to admit a variety of tenants, the embellishments suffered at different periods, and probably will continue so to do, as it is still in other hands." At the present time huge cases and chests often fill up the entrance-gateway of the building in Addle-street. "One of the rooms," continues Malcolm, "was undergoing a complete alteration when I visited it; but I have rescued a curious coat of arms from oblivion, which was in the east window," and which the author of these remarks engraved in his "*Londinium Redivivum.*" According to Chamberlain, who wrote in 1771, this building was formerly Pinners' Hall; but how or from whence he obtained the information we are at a loss to conceive.

Among the plasterers we find the name of Mr. Thomas Brewer, author of "The Life of John Carpenter," and "The Life of the late Alderman Kelly," citizen and plasterer of London, and Lord Mayor 1836.

## SCHOOL BUILDING NEWS.

*South Lopham* (*Norfolk*).—The first stone of the South Lopham Parochial Schools was laid on the 24th ultimo, by Mrs. Fitz-Herbert Bateman, the wife of the rector. The honorary architect is Mr. C. Turner, of Southampton; and the builders are Messrs. Ward & Bishop, of Diss.

*Maristow* (*Plymouth*).—The foundation stone of a school-room has been laid at Maristow, on the estate of Sir Massey Lopes, Bart, M.P., in memory of his eldest daughter, who died last summer. Mr. W. F. Cross, of Exeter, is the architect; and Mr. Matcham, of Plymouth, the builder.

## CHURCH-BUILDING NEWS.

*Warwick.*—The chief stone of a new chapel for the Wesleyans, in Avon-street, Emscote, has been laid. The building will be 46 feet long by 26 feet wide, in the Lombardo-Gothic style; and when completed will be capable of accommodating 200 people and school children, numbering about 100. The principal entrance will face Avon-street; and over the doorway will be a rose window, and on either side of it a small window. Externally the edifice will be composed of red and blue bricks, with Bath stone mouldings and mullions. On each side of the chapel it is intended to place four two-light windows. The roof is to be high-pitched, of stained timber, and covered with ornamental tiles. The end of the chapel will be partitioned off with a screen for the school-room, in the middle of which the pulpit will be fixed. The cost of this structure, exclusive of the site, is to be 350*l.* Mr. Cundall, of Leamington, is the architect; and Mr. Jeffs, of Leamington, the builder. Mr. Hyde, of Milverton, presented the ground.

*Shrewsbury.*—The building committee of the Congregational Church, Abbey Foregate, having solicited contracts for the erection of the proposed building, the following were sent in, and that of Messrs. W. Trow & Sons, of Wednesbury, being the lowest in amount, was accepted:—Messrs. J. Cross, Shrewsbury, 4,870*l.*; J. Barnsley & Sons, Birmingham, 4,462*l.* 9s; Everall & Morris, Shrewsbury, 4,266*l.* 7s. 9d.; Treasure & Son, Shrewsbury, 3,478*l.* 2s. 7d.; W. Trow & Sons, Wednesbury, 3,437*l.* 8s.

*Peterborough.*—Palebrook church is about to be re-pewed. A stained-glass window has been put up. Mr. Webb was the artist employed.

*Whixley* (*Yorkshire*). — In Whixley church,

which has been restored by Mr. Scott, and re-opened, the blank wall under the east window has had a reredos erected from a design furnished by Mr. Scott, and executed by Mr. W. Farmer, of London. The reredos extends the whole width of the chancel, and is composed principally of alabaster and Caen stone.

*Rashcliffe (near Huddersfield).*—The foundation stone of a new church, to be called St. Stephen's, has been laid at Rashcliffe. The site was presented by the proprietor of Rashcliffe estate, in the open space just below the school-room, and plans for a Gothic church, with a spire, to accommodate 600, have been obtained.

## STAINED GLASS.

*Minster Church.*—The repairs of this church will be completed next week. A new stained-glass window has been erected in it by the liberality of Mr. W. Rogers, of Sheriff's Court, Minster. The upper part of the window has been filled with the Dove and other emblems, and the three large openings of the lower part have the subjects of the Israelites crossing the Red Sea, the Baptism of our Lord, and Moses smiting the Rock, under Gothic canopies, with texts of Scripture above and below them. The general groundwork of the window is a geometrical pattern, in bands of colours, and scroll ornament within painted borders; and at the bottom of the window is the following inscription:—"A thank-offering to Almighty God for the restoration of this church. Anno Domini MDCCCLXIII." The window is fixed over the font, and was executed by Mr. Willement, who, a short time since, filled the east windows of the church with stained glass, through the liberality of Mr. S. Hanson, of Ramsgate.

## PROVINCIAL NEWS.

*Stamford.*—Plans for the erection of the new "Calais of All Saints," on the site of the old buildings razed some time ago, were submitted by Mr. Richardson, jun., to a meeting of the Charity Trustees. The design of the new calais is Elizabethan in character, and it is intended that there shall be three dwellings, of one story each, for poor widows. There is to be a covered lobby leading to each room, the entrance door being from St. Peter's-street. In the gable end facing St. Peter's-hill there will be an archway with dwarfed panelled wall inserted, forming a corridor from the end calais with iron palisading in front. The gable end facing St. Peter's-street will be similar to the one looking towards the hill, with this exception, that there will not be a corridor. In each of the gables there is to be a shield for the borough arms, and over the doorway a panel to contain an inscription of the name of the calais and the date of erection. The joint building will be of Clipsham and Casterton stone, and each room will be in extent from 150 to 180 superficial feet. The extent of frontage covered will be about 70 feet. The designer of the new buildings, Mr. Richardson (who is surveyor), stated that he was ready to undertake the work for 425*l.*, and for that sum complete the habitations; excepting, however, any extra depth that might be required below 12 feet for a cesspool, the palisading, and the laying on of water from the street to the cistern. He further undertook, if the trustees thought proper, to have the work inspected by a competent person, and replace any defective portions that might be found. The sum stated was considered a reasonable one; and it was resolved "That in consideration of the various gratuitous services performed by Mr. Richardson for a series of years, the erection of the new calaises be intrusted to him instead of being contracted for, he undertaking to execute the work for 425*l.*"

*Lincoln.*—It has been resolved to enlarge the County Pauper Lunatic Asylum, at an estimated cost of 15,000*l.*, and advertisements for tenders have been ordered to be inserted in the county papers. This outlay of 15,000*l.* has been forced upon the magistrates by the Lunatic Commissioners, who require that all the harmless imbeciles and idiots shall be placed in asylums.

## WORKMEN'S HOUSES IN CONNEXION WITH THE EDINBURGH AND GLASGOW RAILWAY.

SOME time ago, the directors of the Edinburgh and Glasgow Railway Company advertised for competitive designs and plans for several hundreds of workmen's houses, to be erected at Cowlairs, in the neighbourhood of Glasgow, and offered a premium for the best design. This offer brought into the field no fewer than one hundred designs, with accompanying plans, for the inspection of the directors. The directors brought their labours to a close last week, by approving of the designs and plans of Mr. Heiton, architect, of Perth. The site of this new town is immediately to the south of the Cowlairs station. The sloping nature of the ground admits of the series of blocks of houses being built in the form of terraces or crescents; and these blocks, it may be observed, are in four different styles of architecture. Each house will have from two to six apartments, and the rents will range from 4*l.* to 12*l.* In the centre of the ground is a large square, with a water-fountain in the middle; and, to give picturesque effect to the whole, at the corners of the square are shops, with pointed slate roofs, for a baker, butcher, grocer, and dairy. The buildings also include a school-house and library in the Tudor style, together with recreation grounds for workmen and their families. The outlay by the railway company for the buildings, &c., is estimated at about 30,000*l.*; and a portion of the work is to be immediately proceeded with.

## WHAT IS A BEDROOM?

PRIOR to Ladyday, being in search of a house, I "viewed" a large number, both in the suburbs and near the stations on some of the lines converging to the City, but was much struck with the almost general deficiency in the bedroom accommodation.

I wanted, advertised, and sought for a house, with at least five bedrooms. In many houses stated to contain the number required, I found that what were termed bedrooms were frequently literally—cupboards. Houses described as containing five bedrooms, I have often found contained only two bed-rooms proper; the others being a dressing-room, an attic, and a large cupboard, with a window in it.

Can a small room, without a fireplace, or any means of ventilation, except the window or the door, be possibly adapted for a dormitory? Is not a sleeping-room as important to health as a sitting-room? Is it right or humane to place a servant or children in nooks and corners where their strength must inevitably be undermined?

In several new houses attics without fireplaces were supposed to be fit sleeping-rooms for servants, the only way to ventilate which was by opening a skylight. It is obvious that such windows must remain sealed ones in wet, damp, and cold weather.

Well may consumptive and bronchial ailments make the ravages they do if poor human frames are stowed away in such utter disregard of sanitary principles.

Inspectors are appointed to prevent overcrowding amongst the lower classes; but in too many cases I fear that evils commensurate with overcrowding exist in the dwellings of the middling classes.

As no limit can be placed upon the number that may be lodged in our houses, is it not essential to have a clear definition of what constitutes a bedroom, and at the same time incumbent upon all builders and occupiers to recognise the definition in its integrity?

LUNGS.

## THE CITY COURT OF SEWERS AND STREET ARCHITECTURE.

SIR,—I beg to direct your attention to a practice which is becoming a standing rule of the City Court of Sewers, and which is likely to operate very seriously on our street architecture. Every one knows that the plinth or basement of a building is a most important part of the structure. The handsomest building will look flat and poor, and even weak, if it have not a good basement. With ordinary shops the practice is to limit the projection of the shopfront to 3 inches; but difficulties are frequently placed in the way if the projecting parts be of cement, and all projections in stone are now disallowed. The reason alleged for this distinction is, that a projecting plinth, if of stone or even of cement, might be interpreted as constituting a right of soil; whereas a wooden projection might be removed at any time. The same distinction is, curiously enough, insisted on with respect to cellar flaps; the steps of which outside the frontage must be of wood, and not of stone, in order that they should not be considered permanent. But if the wooden shop-front is never removed—and who ever heard of a shop-front being removed by order of the Court of Sewers—there is no likehood of the cement or stone projection being required to be removed; and therefore it is manifestly unfair to the more important and more architectural public buildings and first-rate shop-buildings that they should enjoy a less privilege than the less important and less valuable shops in their vicinity. Why should the public building, when ground is so valuable in the City, and where an inch or two is sometimes of the greatest consequence, be set back behind the general line of frontage, or else be required to be built without a becoming plinth or basement? The argument that the stone plinth might be construed into a right of soil is specious; for the City themselves lay down the rule that the line of frontage is regulated by that of the first floor, and that no projections of shop-front or plinth beyond that line constitute any right of soil. The principle, therefore, now being established, is both unfair and unnecessary;—unfair, as giving one description of building an advantage which is denied to another; and unnecessary, because by the rule of the Court of Sewers the stone plinth could never be recognized as implying a right of soil. No doubt, it is very important in a crowded thoroughfare, like the streets of our metropolis, that the pavement be kept as clear as possible; but every one knows that the public building presents far less obstruction to the passer by than the shop: in the former there is generally but one doorway, and the windows are all private windows; whereas in the shop the whole frontage is a shop front, the goods displayed in which frequently cause a crowd along the entire front: goods, lamps, and sun-blinds frequently obstruct the passer-by, while the lifting-shutter not unfrequently causes a more serious inconvenience. Fairness, justice, public convenience, and a regard to our metropolitan architecture, therefore, alike require that this distinction between stone and wooden projections, which is now being carried out by the Court of Sewers in the City of London, should be done away with.

PALLADIO.

## THE ANNULAR RINGS OF TREES.

### STRENGTH OF TIMBER.

THE following was quoted in a late number of the *Builder*, and has been copied into other periodicals; but as the article does not explain the cause of the want of uniformity in the annular rings of trees, you will perhaps allow me to append to the article a few facts which may be of some value to a number of your readers.

"POPULAR ERROR REGARDING THE WANT OF UNIFORMITY IN THE THICKNESS OF THE ANNULAR RINGS OF TREES.—On reference to the cross section of a newly-felled tree, it will be observed that the timber has not formed of uniform thickness round the pith of the tree. This is uniformly the case towards the base of the spruce, Scotch fir, and larch. The popular belief is, that the wood forms faster towards the side most exposed to the light and the heat of the sun's rays. Were this the case, it would prove that we have more of these from the south-east than from any other quarter. The prevailing high winds in Britain are from the north-west or south-west, and they usually blow hardest in autumn, when the young wood is most liable to be permanently bent in any given direction. This makes the top lean towards the north-east or south-east; and, by one of the many admirable compensating operations of the Great Creator, the wood at the base grows fastest on those sides, so that it may act as a natural buttress, and maintain the centre of gravity."

The above is a very old-fashioned but very unsatisfactory method of trying to explain the cause of any effect that we do not understand: in fact, it is no explanation whatever. We know that the Great Creator is the first cause of every operation in nature, but He at the same time makes secondary laws to govern many of the operations of nature; and if we examine the powers operating upon the growth of trees we will find that it is by simple mechanical action that the annular rings grow thickest on the side opposite to the direction of the prevailing winds, because when the tree is bent it forms a bow or arch, and the fibres on the convex side of the arch undergo a tensile strain, which partially closes the pores of the wood on that side, while on the concave side of the tree the fibres undergo vertical compression, which has a tendency to open the pores on that side: consequently the sap rises more freely on the concave side than on the convex, and causes a more rapid growth on that side than on the other. At the same time the wood is much softer than on the convex side. In proof of this take the Scotch fir, larch, or spruce, and examine the cross section near the base with a microscope, and it will be found that the pores on the convex side are much finer and more compact than on the concave side. Again, take a longitudinal section of the tree: cut through the centre, so as to show both the convex and concave sides, and it will be found that on the convex side the fibres are hard,

and run nearly in straight lines, whereas on the concave side they are soft, and have a wavy appearance, caused by vertical compression. Again, cut equal portions from the convex and concave sides of the same tree, opposite one another, and dry them thoroughly, and it will be found that the wood cut from the convex side has a much greater specific gravity than that from the concave side. Again, the wood cut from the convex side is much stronger, and will sustain a greater transverse strain than wood cut from the concave side of the same tree. Again, the wood cut from the convex side is more durable than that cut from the concave side of the same tree. Where Scotch fir, larch, or spruce has been used for roofing, joisting, or flooring, I have always found that the concave side, with the large fibre, got worm-eaten and quite rotten long before the convex side. These facts I discovered many years ago. A knowledge of them is of great value to parties using that kind of timber, to enable them to judge in what direction to cut up the trees for certain purposes.

WM. BURNS, C.E.

## ROTHERHAM WATER BILL.

SIR,—My attention has been called to the evidence of Mr. Hawksley, C.E., on this Bill, and I know of no more likely medium than your columns through which to express my regret that a man with his alleged reputation should have made a statement before the committee of the House of Commons without any data whatever on which to base his calculation. I allude to the consumption of water in Worksop, which he puts down at 18 gallons per head daily. I regret that Worksop is not so fortunate as to possess any water-works, the inhabitants being supplied throughout the town by pumps. How, therefore, can he undertake to say the consumption of water is 18 gallons per head daily? Surely this must be one of Mr. Hawksley's theories.

I will, for Mr. Hawksley's information, state that the deodorizing works in this town answer the purpose for which they were designed most admirably; that the cost was only about 1s. 6d. per head; and that the annual cost does not exceed 50*l.* per year. Mr. Hawksley's estimate of the cost of deodorising works, as stated in his evidence, is perhaps another of his theories.

For the credit of the profession, I trust there are few men who would risk their reputation as "Mr. Hawksley the theorist" has done in his evidence on this Bill.

ROBERT WHITE,
Clerk to the Worksop Local Board of Health.

## THE MASONIC BUILDINGS COMPETITION.

SIR,—In reference to various letters which have appeared in the *Builder* respecting the competition now going on for the new Masonic buildings in Great Queen-street and the position and powers of the Grand Superintendent of works in relation thereto, I beg to inform you that the appointment of Grand Superintendent of Works (like other offices in Masonry) is an annual one, is in the hands of the Grand Master, and will cease and determine this year on the 29th instant; and that, for the purpose of avoiding any question or embarrassment, the Grand Master, the Earl of Zetland, has, *upon my recommendation to that effect*, declared his intention not to appoint any brother to that office until the result of the competition is known.

S. W. DAUKES, G. S. W.

## GIRDERS OF WROUGHT-IRON AND FIR.

SIR,—In your last issue you publish a "rule for calculating the strength of wrought-iron, flanged, and box girders:" can you assist me to calculate the strength of combined wrought-iron plate and fir girders, now so much in general use?

TUFF.

## PATENTS CONNECTED WITH BUILDING.*

IMPROVEMENTS IN STOVES FOR HEATING AND VENTILATING BUILDINGS.—*R. Zimara.* Dated April 24, 1862.—One of the principal objects of these improvements in stoves is so to construct and arrange the flues and air passages thereof, that the air in its passage to the interior of the building may be heated by pressing through a series of pipes or passages composed entirely of earthenware.

* Selected from the lists in the *Engineer*, *Mechanics' Magazine*, &c.

THE CONSTRUCTION OF A BACKED FORM OR SEAT CAPABLE OF BEING CONVERTED INTO A LEVEL TABLE WITH SEAT, OR A DESK, EITHER LEVEL OR SLOPING, OR AT ANY ANGLE.—*A. Williams.* Dated May 5, 1862.—This invention consists of an iron standard formed of two uprights, connected at the top and bottom by horizontal iron plates, at the upper front corner of which a tenon is inserted and secured by a pivot in the mortise of the other portion of the standard, to which is attached the board to form the back of the seat. Down upon the horizontal plates before mentioned, another board is secured, and forms the seat itself. By raising the back board before mentioned, and turning it forward upon the joint formed by the mortise and tenon before referred to, the back board of the seat forms a level table; or, by being secured by a screw through the cheek of the mortise to be turned forward against the tenon, the back board will be held in any sloping position required, and will form a writing-desk.

IMPROVEMENTS IN APPARATUS FOR BORING SLATE.—*A. Webster.* Dated June 20, 1862.—This invention relates to certain improvements in the arrangement and construction of machinery for boring slate, more particularly in the form used for roofing purposes, so that each slate may be perforated at one or more places at a single operation, the perforations being much improved in form from those produced by the usual mode, and suited to receive countersunk-headed nails, whilst the loss from breakage of slates in boring is greatly reduced or wholly avoided. This invention consists, primarily, in applying a combined punching and drilling movement to the tools operating upon the slate, and shaping these tools and their matrices so as to produce countersunk or otherwise shaped holes. And, secondly, in certain arrangements of parts and mechanism for producing the necessary compound movement of the tools from a simple and intermittent hand action.

IMPROVEMENTS IN COCKS, TAPS, AND VALVES. *J. Endean.* Dated April 24th, 1862.—This consists in the following arrangement of parts:—A duct, or ducts, is or are formed with a cock, tap, or valve-shank, as it is termed, having a chamber or valve-box, provided with a solid or partially solid enlargement of the said duct or ducts, of conical or conoidial form, with the requisite apertures therein, and upon this conical or conoidal part is fitted a hollow cone or conoid correspondent thereto, provided also with apertures communicating with the ducts and ways, adapted so that the steam, gas, water, or fluid will enter the valve-box or chamber, pass over or against the said hollow cone or conoid, and out at the outlet or outlets, this hollow cone or conoid being provided with a stem, spindle, or handle, passing through the chamber or valve-box aforesaid, whereby the hollow cone or conoid may be turned, so as to bring the aperture therein upon, to, or away from the apertures in the aforesaid enlargement of the duct or ducts, and thus open and shut the same as desired. The patentee arranges the apertures that the inlet shall never be closed, and hence the hollow cone or conoid shall always be kept held to its seat with an equal pressure on its centre surface.

ARCHES.—*E. Clark.* A communication. Dated 29th April, 1862.—This invention consists in the peculiar arrangement and construction of arches for bridges, roofs, and similar structures, more particularly when the openings to be arched are of considerable span. These arches are composed of bars or plates arranged in the form of a single or double series of triangles.

## Books Received.

*Les Grandes Usines de France.* Chez MICHEL LEVY, FRERES, 2 bis, Rue Vivienne, Paris.

THIS interesting work by M. Turgan, to which we have before referred, is now in its third volume. The last *livraison* before us contains an elaborate account of *La Foudre* Cotton-mill, constructed by Mr. Fairbairn, and is illustrated by a number of very careful engravings of the machines employed and of the building. In this establishment, one of the finest in France, the work is done by five steam-engines of 500-horse power in the whole, and 600 or 700 persons, including children.

From the *livraison* devoted to the St. Gobain manufactory of plate-glass, we learn that the annual production of glass there has increased in ten years from 95,000 square mètres to 200,000, without including the German establishments. The cost, especially of large sizes, has been greatly lessened: thus a glass of 4 square mètres, which now costs 264 francs, cost, in 1835, 1,245 francs, and in 1805, 4,000 francs. The price of a square mètre has varied thus:—1702, 165 francs; 1791, 174 francs; 1805, 226 francs; 1835, 127 francs; and 1862, 45 francs.

## Miscellanea.

MANUFACTURE OF GAS DEVICES FOR ILLUMINATION.—The extent of this trade would surprise many. As an evidence one firm, we are told, Lambert, Brothers, of Walsall, drilled for the memorable 10th of March, considerably more than 400,000 jets, which they compute would burn more than 500,000 cubic feet per hour.

STREET ILLUMINATIONS AND DECORATIONS.—The council of the Society of Arts have appointed a strong committee to consider and report what awards may be offered by the Society for practical suggestions to improve street illuminations and street decorations for *fêtes*. The committee will probably recommend the offer of considerable premiums for the best examples of different systems of illumination, for new modes, and, perhaps, for the best essay treating of the subject as a whole. The various specimens sent in competition would be exhibited in some convenient gardens, and thus provide a brilliant *fête*. What is mainly wanted to improve public illuminations in London, for example, is *combined action under good direction*.

POISONOUS GREEN.—The first representation of a new piece was given three nights back at Hamburg, in which the female dancers appeared in green costumes, to represent water-nymphs. The stuff of which these costumes were made contained such a quantity of arsenic that the needlewomen who made the dresses all fell ill, and the dancers were attacked with violent symptoms of poisoning whilst on the stage.

NEW PIER AND RAILWAY EXTENSION FOR THE ISLE OF WIGHT.—The Stokes Railway and pier have been inspected by Captain Tyler, R.E., the Government inspector, with the view of opening the same for public traffic on Monday next. These undertakings were commenced by Messrs. Brassey & Ogilvie, the contractors, in 1860, under Mr. Fulton, the engineer by whom the works were designed, and have just been completed. The site of the pier is immediately opposite Ryde and Osborne.

ORDNANCE SURVEY.—The grant of 85,441*l.* has been made, without opposition, for the Survey Topographical Department. The report of the Topographical Department states that the survey of England and Wales will be finished by the end of the present month, and the complete map on the 1-inch scale will shortly be published. Since it was begun, in 1784, surveys of various parts of the United Kingdom have been made, as is well known, on a larger scale; and ultimately the following scales were decided upon as the most proper for the national survey;—For towns with more than 4,000 inhabitants, 1-500th of the linear measurement, which is 126·72 inches to a mile; for parishes in cultivated districts, 1-2500th, equivalent to 25·344 inches to a mile; for counties, 6 inches; general map of the kingdom, 1 inch to a mile.

COLOURING GLASS.—We learn from further inspection and the comments of our guide, that there are two methods of colouring the bubbles we see all around us. The one is by using coloured "metal" entirely; the other by "flashing"—coating white glass with a thin film of colour only. All colour *may* be "flashed:" red *must* be; because the colouring matter used would render the glass blown entirely from red "metal," opaque. So in order to be inducted into the mysteries of "flashing," we seek out a workman who is about to blow a red bubble. The process, we find, is very simple. Having gathered, upon the end of his blow-pipe, a ball of white metal, the operator, before carrying it to the "marver," gives it a twirl in a pot of red metal, and then goes on with his blowing. The two colours retain their relative positions throughout every succeeding process; as the one grows thinner and thinner, the other grows thinner and thinner; and the final result is a sheet of white glass coated with red on one side. Passing on from one workman to another, we notice that though there are bubbles of every other colour, there are no yellow ones; and, on asking the reason, we are told that all the shades of yellow are produced, not out of yellow metal, nor by flashing, but by staining white glass.—*Once a Week.*

THE CITY AND THE PRINCE OF WALES.—Mr. Benson, of Ludgate-hill, has received from the Corporation the order to manufacture the casket in which they propose to present the freedom of the City to his Royal Highness the Prince of Wales. The approved design is in the Cinque-cento style, and will be executed in gold of various tints and enamel. The front is divided into three panels, on the centre of which, on a ground of royal blue enamel, are shields bearing the arms of the Prince and Princess of Wales: above this appears the Prince's crown of State in gold, enamel, and jewels. The casket is supported by four sea-horses. The whole is surmounted by a figure of Britannia.

ROYAL ITALIAN OPERA.—Mr. Frederick Gye has issued a programme of more than common promise. Eight new singers will make their first appearance in England: Mdlle. Patti will re-appear with Mdme. Miolan-Carvalho, and Signors Tamberlik, Mario, Ronconi, Formes, and other known names. "La Forza del Destino," by Verdi, and "Stradella," by Flotow, will be produced for the first time; and Meyerbeer's "L'Etoile du Nord" and several other operas will be revived with new scenery. With Messrs. Beverley, Grieve, and Telbin to paint this, and Mr. Costa to conduct the music, there is every reason to expect a brilliant season.

ARTISTS' GENERAL BENEVOLENT INSTITUTION. The forty-eighth anniversary dinner of this charity took place on Saturday night at the Freemasons' Tavern, the Earl of Carnarvon occupying the chair. The company numbered more than 200 persons, and included;—the Earl of Carnarvon; Sir C. L. Eastlake, R.A.; David Roberts, R.A.; E. M. Ward, R.A.; W. P. Frith, R.A.; H. O'Neil, R.A.; T. Creswick, R.A.; H. Weekes, R.A.; H. Farrer; J. E. Millais, R.A.; Faed, A.R.A.; Dr. O'Connor, Carl Haag, F. Leighton, G. Godwin, P. C. Hardwick, J. Gibson, F. R. Pickersgill, R.A.; G. Plucknett, J. Jennings, C. Fowler, H. W. Phillips, hon. sec.; Heaphy, Dillon Croker, Stone, Flatou, Battam, &c. The object of the institution, which was established in 1814, is to extend relief to distressed meritorious artists, whether subscribers to its funds or not. The subscriptions amounted to 744*l.*, of which 480*l.* were contributed by members of the profession.

PROPOSED INTERNATIONAL SCHOOLS.—M. Barbier, a French Manufacturer, placed at the disposal of the French Committee of the International Exhibition, a sum of 5,000 francs, to be given in prizes for the best essays on the means of establishing international education in Europe. An international jury, of which, among others, Mr. Richard Cobden, M. Michel Chevalier, Sir James Kay Shuttleworth, and Dr. Johnson, were members, have examined the essays, and have just published a report, which shows both the object in view and the best means of carrying it out.* It is proposed to form a European company, including distinguished men in England, France, Germany, and Italy, for the purpose of establishing a college, or rather school, in each of the four great countries of Europe. Each of these colleges would receive children of the four nations, at an early age, in equal numbers. These children, thus living together, would very quickly teach each other their respective languages; firstly, by constant practice; secondly, by classes, which would be formed in accordance with a plan as ingenious as it is new. To each boy a book would be given, which would contain those sentences most frequently used in conversation, expressed in the four different languages. The boys would be divided into groups of four, each group being formed of one boy from each nation. The English boy would read aloud a sentence in English, after which it would be read aloud in the same language by each of the other boys—the English boy acting the part of a teacher, and correcting their pronunciation. The French boy then assumes the part of a teacher, the other boys acting as pupils: the same sentence is read over in French, and corrected in the same manner; and so on for German and Italian. In this manner children would acquire a great many words; and when just beginning to understand and speak—which would require only a few weeks—they would every day be made to speak a different language during their play hours. At the end of every year the pupils would change colleges, and consequently the country they inhabited. But in all these colleges, the discipline, direction, and rules would be exactly alike; so that a boy going from one college to another, would be certain to find there the continuation of the studies he had begun.

* Published by Dulau, Soho-square.

WOOD CARVERS.—The Wood Carvers' Society have found a generous friend in Mr. Vaughan, of the Regent's Park, who has presented ten guineas to the general funds, and offered 20*l.* a year for two years, to pay rent, or to aid in any way the society will point out in encouraging the members to establish in their rooms a modelling and drawing class; or to lead to their attendance at the Government or other schools. The Council of the Wells Street school have offered to forward these views by making special arrangements in the classes and accommodating the time and payments to suit the wants of the carvers generally.

RESTAURANTS FOR THE WORKING CLASSES.—A meeting of gentlemen took place on Saturday afternoon, the 28th ult., at the Working Men's Club, Colonnade, Clare Market, for the purpose of testing the practicability of a new movement, carried out under the auspices of an "Association for the Establishment of Dining and Refreshment Rooms for Working Classes," the object of which is to provide, in the poorer districts of London, restaurants roomy, clean, and well-ventilated, where the working classes can obtain well-cooked dishes, composed of wholesome food, at the smallest possible price. In order to test the matter practically, the company sat down to a substantial dinner, which included soup or broth, meat, vegetables, and pudding (varied at pleasure by fish), and could be served to the working man for the small cost of 4½d. The plan is to be carried out under the direction of Mr. Warriner, Inspector of Cookery to the Army; and Dr. Letheby has consented to act as food examiner.

THE ROYAL SOCIETY.—General Sabine, president of the Royal Society, held his first *conversazione* for the present season, on Saturday evening last, at Burlington House. The reception-rooms were furnished with interesting objects of science and art, among which the most attractive were Professor J. Clerk Maxwell's apparatus for viewing the mixed colours of the spectrum, and his dynamical top; Dr. B. G. Babington's morphometer, an instrument invented in Austria for the firing of mines by frictional electricity; a portion of the Mediterranean cable, from a depth of 70 fathoms, between Sardinia and Africa, incrusted with corallines, and exhibited by Mr. Fleeming Jenkin, together with curious ova and moss-like vegetation from a thousand fathoms' depth; Dr. Cobbold's preparations showing the important advantage which naturalists may find in solutions of magenta, for rendering visible minute anatomical details; Mr. Olley's chromophotographs; a model of the shield ship designed by Captain Coles; and models of the double screw gunboats constructed by Messrs. Rennie for the service of the Spanish Government at the Philippines.

COMPETITION MAY BE INJURIOUS.—In the *Penny Newsman* Mr. E. Chadwick, writing on the economic results obtainable by co-operation, says: "In the service of the baker, in London, the profit in the production and distribution of bread was, under ordinary circumstances, about 12s. per sack of flour, making ninety-four four-pound loaves, being at that time nearly one penny three farthings per loaf. A field of supply or sale of twelve or fourteen sacks a week, according to local circumstances, may be assumed to be a 'living profit' for a respectable baker in a moderate way of business in London, to pay the rent and taxes of a 60*l.* or 80*l.* house and shop, with its bakehouse. With the same bakehouse and shop, and nearly the same fixed establishment charges, he might produce and distribute double the quantity, but from this he is generally precluded by a competitor. Upon fields of supply so occupied with double capitals other competitors break in, until the share of the field is reduced, often to the distribution of six sacks a week, and sometimes to four sacks each, by an occupation by four capitals of a field in which competition would be better maintained by two. The sanitary condition of the small bakers and competitors in towns, whether masters or journeymen, is most wretched. The bakehouses are confined, miserable, and unwholesome. The little master, to pay his rent, lets off the upper portions of the house, and crowds himself and family in the lower apartments. The small capitalist who enters into this sort of competition is too frequently a man of small understanding, and of the smallest skill in working of his material, except when, under the pressure of his necessities, his ingenuity is excited in adulterating it. The only chance of relief for the consumers will, I apprehend, be found to be in removal of the producer's necessities and temptations by creating widened fields for supply and corresponding production on a larger scale."

A LARGE PIECE OF ELM TIMBER.—A portion of a gigantic elm tree, probably the largest in Hampshire, the property of Mr. William Warner, of Botley, has just been placed in his timber-yard at Northam. Although not half of the boll, it weighs about 18 tons, is 33 feet in length, and, on an average, more than 4 feet thick. It was until lately standing in the grounds of Winchester College. The base is of exceedingly large circumference.

PREVENTION OF FRAUDS ON BANKERS.—Since the suggestion was made in the *Builder* to insert sums in letters of credit with perforated stamping implements, we observe that another and very simple mode of obviating fraud is in practice among the mahajuns, or native bankers of India. They merely write the half immediately after the sum drawn, *e.g.*, "Twenty-two pounds, the half of which is eleven." Thus the word twenty could not be altered into seventy without necessitating the word eleven being changed into thirty-six, which would lead to instant detection.

THE INVENTORS' INSTITUTE.—On Monday evening a meeting of the members of the Inventors' Institute was held at the Polytechnic, Regent-street. Sir John S. Lillie occupied the chair, and the subject for consideration was "Inventions for obtaining Aërated Fresh Water from Sea Water," which was introduced by Dr. Normandy. The doctor explained the system he had introduced for the purpose of getting aërated water from sea water. The water so obtained he described as being pure, sweet, wholesome, and immediately fit for drinking.

MANCHESTER AND SALFORD SANITARY ASSOCIATION.—At the annual meeting of the members of this association a report was presented by the committee, containing a summary of the committee's proceedings during the past year. The result of careful inquiries from all available sources respecting the state of the poor was the almost unanimous opinion that none of the effects of starvation could be traced, either directly or remotely, amongst the unemployed operatives: on the contrary, the belief was expressed that the very poor were never so well cared for, never so well fed. All the evidence pointed to the same conclusion, and declared distinctly that there had been no deterioration of health or strength amongst the operatives in consequence of the cotton famine. The rate of mortality in Manchester during the past year was 32¼ per thousand of the population, and the average rate of the last five years had been 32½; but when it was mentioned that the average death-rate in England was 22 in 1,000, it would be seen that much still remained to be done in Manchester. It was necessary to urge forward measures of sanitary reform; and to spread amongst the poor a better knowledge of the laws of health.

THE EXHIBITION BUILDING.—In reply to questions put last week in the Commons, the Chancellor of the Exchequer said the Government had entered into no negotiations with Messrs. Kelk & Lucas for the purchase of the building, either with a view to remove into it a portion of the collections of the British Museum, or for any other object. The disposal of the building depended upon a concurrence of parties, and not upon Messrs. Kelk & Lucas alone, and it could only be by an agreement in views of the Commissioners of 1862, the Commissioners of 1851, and Messrs. Kelk & Lucas, that any proposal on that subject could be made. He believed that the Finance Committee of 1851, which was in some sense the organ for such purposes of the Commissioners of 1851, had entertained the question, whether it would be expedient to make a proposal to the Government to take over the building. Having heard, unofficially, what were the views of the contractors, he did not think, so far as he was able to comprehend them, that those views would be compatible with what the Government would think due to the exigencies of the public service or to the justice of the case. He believed the Commissioners of 1862 had prepared their principal report, in which they gave an account of the transactions connected with the Exhibition. That report only awaited one or two necessary formalities in order to be laid before Parliament. He was not aware that the Commissioners had come to any absolutely final conclusion upon the subject of the removal of the building within six months after the closing, but he believed that directions had been given to issue to the contractors a notice requiring them to remove the building, so as to keep alive the full rights of the Commissioners as they stood under the original agreement.

THE CONCENTRATION OF THE COURTS OF JUSTICE.—In reply to a recent question in the Commons, Sir G. Grey said it was not the intention of Government to introduce a Bill on this subject during the present session, but the matter was under their consideration. He hoped at a future day to be able to give a more definite answer.

LIGHTING A CHURCH STEEPLE.—The steeple of the Sheffield parish church was illuminated on the 10th. On three sides of the octagon, says the *Independent*, the lighting was perfect, but on the other five sides it was found impossible to carry the lights beyond some taps which have been inserted about the centre of the tower. The result was very satisfactory, however, so far as the lighting was carried. The only things wanting were larger torches to reach above the taps. The mayor is determined to make the illumination a success, and the steeple will be lighted again on the first favourable opportunity.

MONUMENTAL.—A subscription has just been opened for the erection of a monument to the Scotch novelist, John Galt, author of "The Entail," "Annals of the Parish," "Ayrshire Legatees," &c. Mr. Galt lived and died in Greenock. It is proposed that the monument shall be erected in the Greenock cemetery. The design will be entrusted to Mr. George Mossman. The monument will have a bronze profile, and two or three reliefs illustrative of Galt's works. The cost will be about 50*l.*

GEORGE STEPHENSON IN A DRAMA.—It deserves to be noted that in a piece now being acted at the Victoria Theatre, entitled "The Engineer: Perseverance;" the early career of George Stephenson (called in the drama Geordie Evanson) is to a certain extent illustrated. Geordie himself delivers a number of speeches on the value of perseverance and the value of science, and what is more is listened to attentively. Put into his mouth the paragraph, for example, which went the round of the newspapers some year or so ago, pointing out that the heat we get from coal is due to the bottled-up sunbeams of centuries ago, gets a hearty round of applause. Some of the scenery and effects are very good, and the whole get-up of the piece highly creditable.

BRIGHTON PUBLIC BATH ASSOCIATION.—A public meeting has been held in Brighton to consider the desirability of establishing baths and washhouses; and a Brighton Public Bath Association has already been formed, "for the purpose of establishing hot-air, and hot and cold sea and fresh water baths in Brighton, at a scale of charges which will place the luxury of the bath within the reach of all classes." The undertaking is backed by several residents of influence; and the working classes are taking up the shares, of which it is intended there should be 3,000, at 1*l.* each. The local *Herald* states that a favourable site, in a central position, has been secured. Baths and wash-houses are much needed by the working classes of Brighton, and it is to be hoped it will not be long before some are established either by the town council or an association established for the purpose.

ACCIDENTS.—While a number of plasterers and their labourers, nine in all, were at work in a room on the third story of the cotton mill of a co-operative company, now nearly ready for the reception of machinery at Woodnook, Accrington, they suddenly heard a loud crash, and the floor on which they were standing, together with those above and below them, fell in; and they, together with the *débris*, were precipitated a depth of 50 feet. Six of the unfortunate men were completely buried in the ruins. Two others were partially immured while the third escaped altogether.——At Worthing, a new house that was being erected in East-street has fallen while the workmen employed in building it were all on the premises; but, fortunately, every one escaped without sustaining any injuries of a serious nature. The house had been about a month in erection, and was run up as far as the roof all round, with the exception of a little piece in front, which would have been completed on that afternoon; and the workmen were pursuing their labour unconscious of the slightest danger, when suddenly a part of the south-east corner gave in, and the whole of the south as well as great portions of the east and west walls, fell into the building, dragging down scaffold-poles, beams, planks, tools, and ladders, into a confused heap of *débris*. The house was being erected by Mr. Herbert, under a contract with Mr. Ward, builder, and on him the loss of labour and material will fall. Why *did* it fall?

AMERICAN SCULPTURE.—The Richmond papers record the death of Alexander Galt, the young Virginian sculptor, who was the first Southerner that has established a reputation in statuary. His full length figure of Jefferson, at the University of Virginia, won for him honour. His latest work was a bas-relief in plaster of Stonewall Jackson, which is in the possession of the Hon. A. R. Boteler. Mr. Galt died of the small-pox.

NOTTINGHAM SCHOOL OF ART.—On the 17th ultimo, the tenders for the proposed School of Art were received by Mr. Bakewell, the architect, and opened in the presence of the secretary. On the 24th they were presented to the committee, and reported upon by the architect. After some little discussion the tender of Mr. Acton was unanimously adopted. We understand that with the exception of three the tenders run very close together.

AN ADDRESS WOVEN IN SILK TO THE PRINCESS OF WALES.—The town-council of Coventry have given instructions to a committee to procure designs for an address to the Princess of Wales, to be woven in silk, at a cost probably of 100*l.*, exclusive of the expense of a loom, which would itself amount to 150*l.* or 200*l.*; but the manufacturer of the Godiva ribbon for the International Exhibition has offered the use of his loom, otherwise one would require to be built for the purpose.

NEW RAILWAY BREAK.—Mr. John Clark, of Glasgow, has patented a safety break, which is well spoken of by the Scottish papers, according to which it appears that while the speed of a train of five carriages on an incline was about forty miles per hour, the stoppage was effected in less than 300 yards; and that on the same incline, at less speed, the train was brought to a stop in about 150 yards; and on the level, at a speed of thirty miles per hour, a stop was made in about 100 yards.

RAILWAY MAPS.—The lines proposed throughout England, Scotland, and Ireland, by the Bills of Session, 1863, as well as all those already constructed and in course of construction, are shown on a series of three coloured maps,—one for each country, and brought up to 28th February,—which have just been published by Messrs. Day & Son, lithographers to the Queen. The interlacement of the country, and especially of England, by these iron arteries and veins, is an interesting subject of contemplation. The Continent and America are getting well covered; but few such sights present themselves over all the world as that of the railway maps of England. Of course in those now published by Messrs. Day, the network becomes thicker than ever.

THE BRIGHTON DRAINAGE QUESTION.—At a meeting recently held in Rottingdean, a resolution was passed to the effect that the proposed scheme of drainage for the parishes of Brighton and Hove under the turnpike road to an outfall in Saltdean, in the parish of Rottingdean, would be highly prejudicial to the health and prosperity of the inhabitants of Rottingdean; the cliffe above Saltdean being a favourite resort of the inhabitants and visitors of Rottingdean, and the bay at Saltdean much frequented by bathers; and that the town council of Brighton should therefore be made acquainted with the strong feeling of opposition to this proposed scheme of drainage, which prevails amongst the inhabitants and holders of property both there and in its vicinity.

NEW BRIDGE AT EBCHESTER.—A new bridge over the Derwent has been opened at the village of Ebchester, about two miles to the east of Shotley Bridge. The bridge is built entirely of freestone, from one of the Greenwich Hospital quarries, the use of which has been given gratuitously, in addition to a subscription of 200 guineas. The freestone is undressed, and the structure has been formed of three semi-circular arches. The span of the centre arch is 34 feet; and that of the other two 28 feet each. The arches are supported by four piers, about 4½ feet broad, which rest upon a foundation of concrete. From low water-mark to the keystone of the centre arch is 20 feet; and to the keystone of each of the other two is 17 feet 6 inches. The architect was Mr. J. Smith, of Medomsley; and the contract for the building work was given to Messrs. Lyness & Ayton, of Crook. The work in its progress has undergone the supervision of some of the magistrates; and also of Mr. Joseph Howison, surveyor for the county of Northumberland; and Mr. William Crozier, surveyor for the county of Durham. The contract price, including the approaches to the bridge, amounts to about 700*l.*

ALBERT MEMORIAL.—The Butchers' Charitable Institution are now erecting at Walham Green Almshouses in memory of the late Prince Consort. Last week the foundation stone was laid by Mr. Francis Healey, J. P. The architect is Mr. Henry M'Calla, and the builder Mr. Avery.

AGE OF THE YEW TREE.—But it was also the most important of our indigenous evergreen trees; and evergreen foliage is a type of immortality. This characteristic of the yew would not be overlooked by those who, having no other books, read the book of Nature the more studiously. Moreover, it is by very far the longest lived of all our trees. Some live still which have lived already 1,800 years. Why, a tree of that age—and they probably abounded in the primæval forests of the chalk downs, where they are still to be seen in every hedge-row—a tree of that age in British times must have dated back from near the Flood. To British minds such trees must have seemed deathless. The poetic half-barbarian mind would see in a tree which lived on age after age, keeping its foliage ever green, the fittest symbol, below the stars, of immortality.—*The Churchman's Family Magazine.*

A GLIMPSE OF LIGHT AS TO ANCIENT AMERICA.—Some glass beads of unquestioned Phœnician manufacture are reported to have been found at Beverley, Canada, in an "ancient ossuary of the copper age." May it not turn out, after all, that what Plato tells us of was true, that the Atlantic was once "navigable," or had been navigated, ages before his time, when warlike tribes from beyond the ocean invaded and overran all Lybia and other countries in what we call "the old world?" This would go far to explain the similarity of the ancient American temples and teacolis to ancient Egyptian, Babylonian, and other structures. And, by the way, the chronologies of the Egyptian priests in Plato's time, in which tens of thousands of years were treated as a mere bagatelle, and the Greeks were regarded as conceited upstarts of recent times, are likely now to be received a little more respectfully than heretofore, considering our enlarged ideas of the antiquity of man: perhaps, too, Chinese and Indian chronologies will be reconsidered, and a little less contemptuously treated than they have been by our own conceited but improving generation.

## TENDERS.

For building Barrington Hall, near Hatfield Broad Oak, Essex, for Mr. G. A. Lowndes. Mr. Edward Browning, architect, Stamford. The estate to find materials of the value of 4,000*l.*:—

| | |
|---|---|
| Brown | £11,503 0 0 |
| Thoday & Clayton | 11,470 0 0 |
| Wilson | 11,299 15 0 |
| Timms | 11,100 0 0 |

For a farm house, exclusive of excavations and concrete foundations, also for the brickwork and slater's work to the outbuildings, to be erected on the Wimpole estate, for the Right Hon. the Earl of Hardwicke. The clerk of works on the estate, Mr. Erant, architect:—

| | House. | Outbuildings. |
|---|---|---|
| Bell & Sons | £894 | £592 10 |
| Genison | 750 | 590 0 |
| Thoday & Clayton | 748 | 585 0 |

For building a house at Enfield Chase, for Mr. Nott. Mr. Donald Campbell, architect:—

| | |
|---|---|
| Field | £475 0 0 |
| Cushing | 453 12 0 |
| Greenwood | 434 0 0 |
| Patman | 429 0 0 |
| Harradine | 407 0 0 |

For alterations to the King's Arms, public house, Moor-street, Soho. Mr. E. C. Wade, architect:—

| | |
|---|---|
| Baguley | £620 0 0 |
| Westrop | 560 0 0 |
| Sillock | 450 0 0 |

For cottages at Riverhead, on the estate of the Right Hon. Earl Amherst. Mr. Mathews, Reigate, architect. The parties work out their own quantities:—

| | |
|---|---|
| Punnett | £1,279 0 0 |
| Wood | 1,105 0 0 |
| Henderson | 1,126 0 0 |

For the erection of a rectory house at West Hackney, for the Rev. T. D. Lamb. Mr. Chester Cheston, jun., architect:—

| | |
|---|---|
| Dove (Brothers) | £2,075 0 0 |
| Maeers | 1,833 0 0 |
| Stevenson | 1,825 0 0 |
| East | 1,763 0 0 |
| Bond | 1,721 0 0 |
| Perry | 1,500 0 0* |

For works to be done in erection of shed-building, &c., in rear of house, No. 55, Hatton-garden, for Mr. Fordham. Mr. H. Mawley, architect:—

| | |
|---|---|
| Baker | £165 0 0 |
| Newbold | 125 0 0 |
| Fearman | 122 0 0 |
| Wagstaff | 110 0 0 |

* Stated to be in error for 1,600*l.*